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## A VASCULAR FLORA OF WINOUS POINT, OTTAWA AND SANDUSKY COUNTIES, OHIO<sup>1,2</sup>

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### ABSTRACT

This study describes the present-day vascular flora of the marshes, woodlots, dikes, and drainage ditches of Winous Point, which is located approximately  $3\frac{1}{2}$  miles southwest of Port Clinton, Ohio, near the mouth of Muddy Creek, at the western end of Sandusky Bay. Vascular plants found are recorded in a catalogue. Changes in the floristic composition of the marshes are discussed by comparing A. J. Pieters' observations (1901) of some marsh plants at the western end of Lake Erie with the present marsh flora. Plants reported by Pieters but not found at the present are predominantly submersed or partially emerged rooted aquatics, such as *Elodea canadensis* Michx., *Najas flexilis* Rost & Schmidt., *Sagittaria graminea* Michx., *Vallisneria americana* Michx., and some *Potamogeton* species. *Zizania aquatica* L. was common at the turn of the century, while at present it is uncommon. In 1901 *Phragmites communis* Trin. formed "extensive associations," while now it is common only in small scattered patches. Pieters reported *Typha latifolia* L. as everywhere and *T. angustifolia* L. as rare. Now *T. angustifolia* is very common, whereas *T. latifolia* is found only sporadically. *Sagittaria rigida* Pursh and *S. latifolia* Willd. are also reversed in frequency, with *S. rigida* rare today and *S. latifolia* now common. Factors that probably have contributed to these floristic changes, as exemplified by the above species, are construction of drainage ditches in the Black Swamp, marsh management practices at Winous Point, and pronounced physiographic changes that have occurred over the past 150 years (based on maps) at the mouths of Muddy Creek and the Sandusky River.

Winous Point is a tract of land owned by the Winous Point Shooting Club (fig. 10), which is under the management of Dr. Robert L. Meeks. It is located about  $3\frac{1}{2}$  miles southwest of Port Clinton, Ohio, off state route 53, near where Muddy Creek and the Sandusky River empty into the western end of Sandusky Bay. This report records the vascular plants found in that area at the present time and compares them with those reported by earlier observers.

Moseley (1899) was the first person to publish a catalogue of the flowering plants and ferns growing in Erie and Ottawa Counties, Ohio, but his observations extended only as far west as Port Clinton in Ottawa County. Because Winous Point is located southwest of Port Clinton and because Moseley's paper does not have specific references to plants of the upper Sandusky Bay region, no general comparison between the plants listed in his catalogue and those in the present floristic study is possible, although his work is helpful in making interpretations.

Pieters (1901) reported on the marsh plants found at the western end of Lake Erie. His list of phanerogams (flowering plants) for the area, with locality information and frequency data, have made possible a comparison of the floristic composition of the Winous Point area at the turn of the century with that of the present.

<sup>1</sup>Presented as a thesis in partial fulfillment of the requirements for the Degree Master of Science, The Ohio State University, 1967. Portions of this paper were read at the annual meeting of The Ohio Academy of Science held at Bowling Green State University, April 18, 1968. Paper No. 753 from the Botany Program.

<sup>2</sup>Manuscript received June 9, 1968.

Meeks (1963) completed a seven-year ecological study of four marsh units (in the SW  $\frac{1}{4}$  of Sec. 15 and the NW  $\frac{1}{4}$  of Sec. 22, Bay Township, Ottawa County), in which the effect of drawdown date (lowering of the water level at different times during the year) on plant succession was studied. These marsh units are located at the northern boundary of the Winous Point Shooting Club and comprise 80 acres. Meeks reported the presence of 80 taxa (26 genera and 54 species). All specimens collected during his study have been discarded.

The present study includes a catalogue of the vascular flora of Winous Point and of adjacent Squaw Island, representing a total of 365 species, of which 145 species (47 families) occur on Squaw Island. Squaw Island (fig. 1) covers an area of approximately three acres, enclosed by rocks at some places. Dry land on Squaw Island constitutes only about one acre, the remainder being marsh with some open water. The highest point above the level of Sandusky Bay, approximately four feet high, is at the western end of the island. All collections and observations of plants at Winous Point were made from June through October of 1966 and from April through October of 1967. Information about the spring flora of Squaw Island is incomplete and merits further study. Voucher specimens of all species listed in the catalogue have been deposited in The Ohio State University Herbarium, Columbus.

#### FLORISTIC COMPOSITION OF WINOUS POINT

Winous Point has been divided, by a network of dikes, into a number of marsh units. These dikes are mounds of sediment taken from adjacent drainage ditches or from Sandusky Bay, on which, in most cases, are roads linking the marsh units (fig. 10). A typical dike road (fig. 2) has vegetation for a distance of about three feet on each side. Species representative of the dikes include:

##### Woody species:

*Catalpa speciosa*  
*Cephalanthus occidentalis*  
*Cornus drummondii*  
*Crataegus mollis*  
*Fraxinus pennsylvanica* var.  
*pennsylvanica*  
*Morus alba*

*Rhus glabra*  
*Rhus typhina*  
*Ribes americanum*  
*Rosa setigera*  
*Salix interior*  
*Sambucus canadensis*

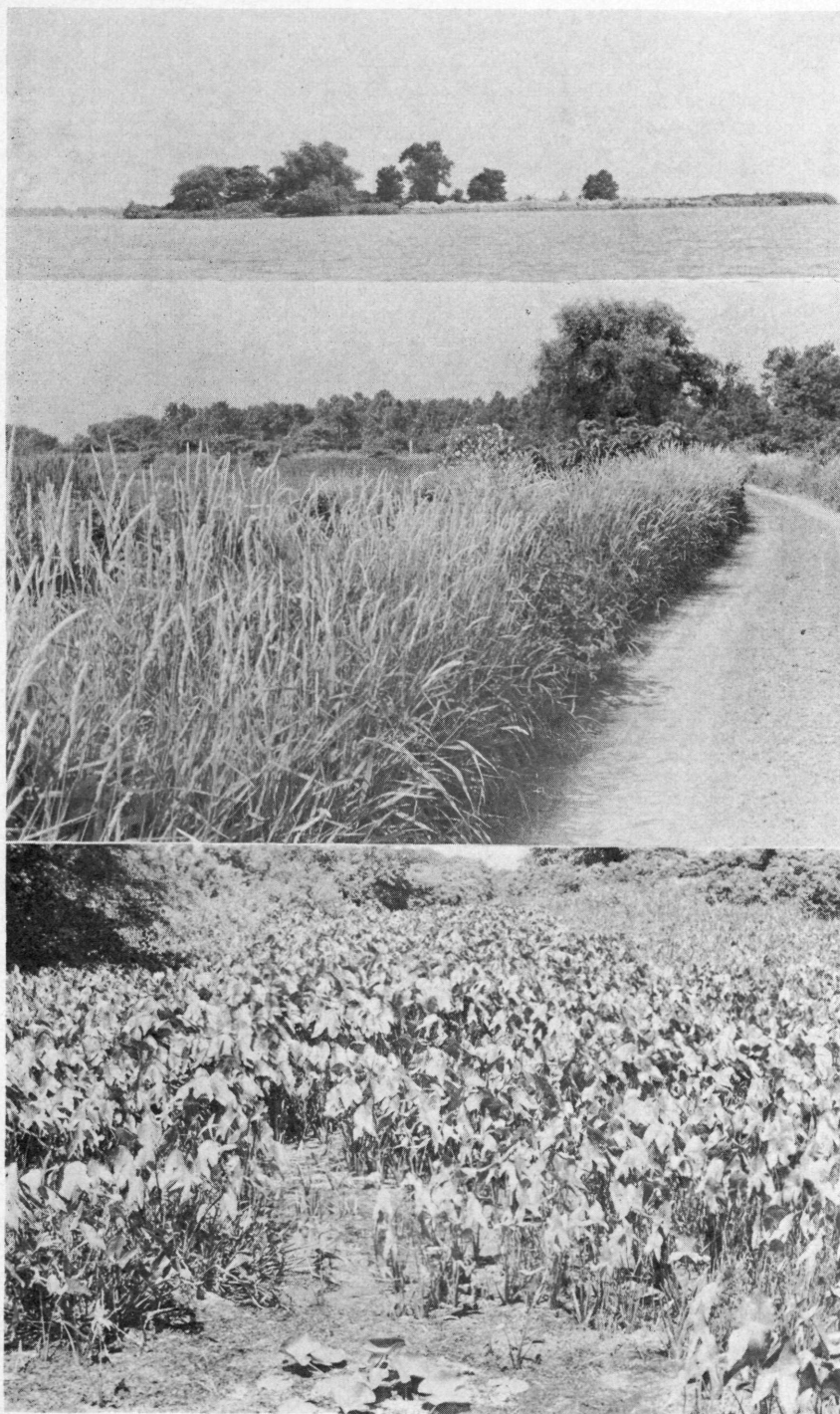
##### Herbaceous species:

*Abutilon theophrasti*  
*Alliaria officinalis*  
*Ambrosia trifida*  
*Apocynum cannabinum*  
*Arctium lappa*  
*Asclepias incarnata*  
*Asclepias syriaca*  
*Aster novae-angliae*  
*Aster pilosus* var. *pilosus*  
*Barbarea vulgaris* var. *vulgaris*  
*Brassica kaber*  
*Bromus commutatus*  
*Bromus inermis*  
*Bromus tectorum*  
*Cirsium arvense*  
*Clematis virginiana*  
*Cyperus esculentus*

*Datura stramonium*  
*Dipsacus sylvestris*  
*Echinochloa crusgalli*  
*Echinochloa walteri*  
*Elymus virginicus*  
*Epilobium glandulosum* var. *adenocaulon*  
*Erechtites hieracifolia*  
*Erigeron canadensis*  
*Euphorbia maculata*  
*Erysimum repandum*  
*Gaura biennis*  
*Hibiscus trionum*  
*Hordeum jubatum*  
*Impatiens capensis*  
*Lepidium campestre*  
*Lolium perenne*  
*Lychnis alba*

#### EXPLANATION OF FIGURES

- FIGURE 1. Squaw Island. Northeast  $\frac{1}{4}$  Section 27 Bay Township, Sandusky County, Ohio.  
 FIGURE 2. A dike road lined with *Phalaris arundinacea*. North central Section 22 Bay Township, Ottawa County, Ohio.  
 FIGURE 3. Drainage ditch with *Sagittaria latifolia*. South central Section 14 Bay Township, Ottawa County, Ohio.



*Lythrum alatum*  
*Medicago lupulina*  
*Melilotus alba*  
*Melilotus officinalis*  
*Mirabilis nyctaginea*  
*Nepeta cataria*  
*Oenothera biennis*  
*Phalaris arundinacea*  
*Phytolacca americana*  
*Polygonum coccineum*  
*Polygonum convolvulus*  
*Polygonum lapathifolium*  
*Polygonum pennsylvanicum*  
*Polygonum punctatum*  
*Polygonum sagittatum*

*Polygonum scandens*  
*Rumex crispus*  
*Scrophularia marilandica*  
*Scutellaria epilobiifolia*  
*Scutellaria lateriflora*  
*Silene notiflora*  
*Solanum dulcamara*  
*Solanum carolinense*  
*Sonchus asper*  
*Sonchus uliginosus*  
*Stachys tenuifolia*  
*Teucrium canadense*  
*Thlaspi arvense*  
*Verbascum thapsus*  
*Verbena hastata*

Drainage ditches parallel most of the dikes. Habitats in the ditches range from open water, where submergent or partially emergent aquatic species are found, to drier areas supporting emergent forms (fig. 3). The following are species commonly found in drainage ditches throughout the Winous Point area:

Aquatic species:

*Ceratophyllum demersum*  
*Lemna minor*  
*Lemna trisulca*  
*Myriophyllum exalbescent*  
*Polygonum coccineum*

*Potamogeton crispus*  
*Riccia fluitans*  
*Spirodela polyrrhiza*  
*Wolffia columbiana*

Emergent species:

*Alisma subcordatum*  
*Bidens cernua*  
*Bidens comosa*  
*Bidens frondosa*  
*Boltonia asteroides*  
*Butomus umbellatus*  
*Cicuta bulbifera*  
*Cicuta maculata*  
*Cyperus diandrus*  
*Cyperus erythrorhizos*  
*Cyperus odoratus*  
*Cyperus rivularis*  
*Cyperus strigosus*  
*Eclipta alba*  
*Eleocharis calva*  
*Eleocharis obtusa*  
*Equisetum arvense*  
*Eupatorium perfoliatum*  
*Glyceria striata*  
*Helenium autumnale*  
*Juncus dudleyi*  
*Juncus tenuis*

*Juncus torreyi*  
*Lippia lanceolata*  
*Ludwigia palustris* var. *americana*  
*Lycopus americanus*  
*Lycopus uniflorus*  
*Lysimachia ciliata*  
*Lysimachia nummularia*  
*Lysimachia thyrsiflora*  
*Mentha arvensis*  
*Mimulus ringens*  
*Penthorum sedoides*  
*Polygonum persicaria*  
*Ranunculus abortivus*  
*Ranunculus hispidus*  
*Ranunculus pennsylvanicus*  
*Rorippa islandica* var. *fernaldiana*  
*Rorippa islandica* var. *hispida*  
*Rorippa sylvestris*  
*Rumex verticillatus*  
*Sagittaria latifolia*  
*Utricularia vulgaris*  
*Xanthium strumarium*

The Winous Point area was divided, for the purpose of this study, into nineteen sites, coinciding with the dike roads and the boundary limits of the Winous Point Shooting Club (fig. 10). Descriptions and major vegetation of each of these sites follow, from which one may get a general idea of the floristic composition of the Winous Point area.

Site 1: Predominantly a marsh of *Typha angustifolia*, *Hibiscus palustris*, and *Decodon verticillatus* (fig. 4). In various places throughout this site, these

#### EXPLANATION OF FIGURES

- FIGURE 4. *Decodon verticillatus* in the foreground arched over the drainage ditch with *Hibiscus palustris* and *Typha angustifolia* in the background. Southeast  $\frac{1}{4}$  Section 14 Bay Township, Ottawa County, Ohio.
- FIGURE 5. A stand of *Pontederia cordata*. North central Section 22 Bay Township, Ottawa County, Ohio.
- FIGURE 6. A stand predominantly of *Hibiscus palustris*. *Populus deltoides* in the background. Southwest  $\frac{1}{4}$  Section 15 Bay Township, Ottawa County, Ohio.



- three species are found in monospecific belts, with *Typha* in the center and *Decodon* around the margin. Of less common occurrence are *Sparganium eurycarpum*, *Nelumbo lutea*, *Pontederia cordata*, and *Rumex orbiculatus*.
- Site 2: A mudflat and adjacent wooded area along Sandusky Bay. On the mudflat are *Helenium autumnale*, *Mentha arvensis*, *Mimulus ringens*, *Ammannia coccinea*, *Lippia lanceolata*, *Lysimachia nummularia*, *Boltonia asteroides*, *Penthorum sedoides*, *Eragrostis hypnoides*, *Lindernia dubia*, *Alisma subcordatum*, *Scirpus validus*, *S. acutus*, *S. fluviatilis*, and *Rumex maritimus* var. *fueginus*. In the wooded area, woody plants include *Acer saccharinum*, *Fraxinus pennsylvanica* var. *pennsylvanica*, *Salix* sp., *Populus deltoides*, *Morus alba*, *Rhus typhina*, *Gleditsia triacanthos*, and *Ribes americanum*. Herbaceous plants of intermittent occurrence (both on the mudflat and in the woods) are *Teucrium canadense*, *Phytolacca americana*, *Solidago* sp., *Cirsium arvense*, *Datura stramonium*, *Epilobium glandulosum* var. *adenocaulon*, *Verbena hastata*, *Brassica kaber*, *Barbarea vulgaris* var. *vulgaris*, *Impatiens capensis*, *Vernonia altissima*, *Scrophularia marilandica*, *Boehmeria cylindrica*, *Pilea pumila*, *Urtica procera*, *Echinochloa crusgalli*, *E. walteri*, *Polygonum sagittatum*, and *Parthenocissus inserta*. In open places are *Typha angustifolia*, *Hibiscus palustris*, *Phragmites communis*, and *Actinomeris alternifolia*.
- Site 3: A marsh dominated by *Typha angustifolia* and *Sparganium eurycarpum*. *Pontederia cordata* and *Leersia oryzoides* are less common. In the open water, a few small isolated colonies of *Sagittaria rigida* and *Eleocharis smallii* occur.
- Site 4: An Oak-Hickory woods of *Quercus macrocarpa*, *Q. prinus*, *Q. palustris*, *Carya ovata*, and *Fraxinus pennsylvanica* var. *pennsylvanica*.
- Site 5: A marsh unit with *Hibiscus palustris*, *Scirpus fluviatilis*, *Sparganium eurycarpum*, *Pontederia cordata*, *Nelumbo lutea*, and *Bidens cernua* predominant.
- Site 6: A small wood lot of *Gleditsia triacanthos*, *Fraxinus pennsylvanica* var. *pennsylvanica*, and *Quercus bicolor*. (Great blue herons, *Ardes herodias* subsp., nest in the tops of the trees throughout this site.) In open places *Phragmites communis* is found.
- Site 7: Planted fields of corn (*Zea mays*), buckwheat (*Fagopyrum sagittatum*), broom-corn (*Sorghum vulgare*), and sunflower (*Helianthus annuus*).
- Site 8: A marsh (fig. 5) composed mostly of *Pontederia cordata*, *Sagittaria latifolia*, *Nymphaea tuberosa*, *Nelumbo lutea*, *Sparganium eurycarpum*, *Typha angustifolia*, *Scirpus validus*, *S. acutus*, and *S. cyperinus*. The only large stand of flowering rush, *Butomus umbellatus*, at Winous Point occurs in the north-eastern corner of this site. Eight plants of *Zizania aquatica* (wild rice) were also present here, the only site at which this species occurs.
- Site 9: Predominantly a woody area with the following trees common: *Acer negundo*, *Populus deltoides*, *Celtis occidentalis*, *Gleditsia triacanthos*, *Fraxinus pennsylvanica* var. *pennsylvanica*, *Catalpa speciosa*, *Ulmus rubra*, *U. americana*, *Rhus typhina*, *R. glabra*, and *Xanthoxylum americanum*. Shrubs are *Ribes americanum*, *Cornus drummondii*, *Viburnum lentago*, *Rosa setigera*, and *R. multiflora*. Herbaceous plants are *Impatiens capensis*, *Urtica procera*, *Elymus virginicus*, *Vitis riparia*, *Clematis virginiana*, *Anemone canadensis*, *Verbascum blattaria*, *Lobelia inflata*, *Agrimonia parviflora*, *A. pubescens*, *Ornithogalum umbellatum*, *Leersia virginica*, *Cinna arundinacea*, *Scutellaria nervosa*, *Iris virginica* var. *shrevei*, *Acalypha rhomboidea*, *Pilea pumila*, *Carex rosea*, *C. muhlenbergii*, *C. vulpinoidea*, *C. stipata*, *C. tribuloides*, *C. cristatella*, *C. lanuginosa*, *C. granularis*, *C. amphibola* var. *turgida*, *C. Frankii*, *C. lacustris*, *C. atherodes*, *C. Grayii*, *Boehmeria cylindrica*, *Parietaria pensylvanica*, *Scirpus lineatus*, *Erythronium albidum*, *Claytonia virginica*, *Viola papilionacea*, *V. pubescens*, *Erigeron philadelphicus*, *E. annuus*, *Galinsoga ciliata*, *Anthemis cotula*, *Matricaria matricarioides*, *Cichorium intybus*, and *Onoclea sensibilis*.



- Site 10. A marsh unit with large stands of *Nelumbo lutea*, *Pontederia cordata*, *Nymphaea tuberosa*, *Nuphar variegatum*, and *N. advena*. Aquatics of less frequent occurrence are *Potamogeton nodosus* and *Heteranthera dubia*. *Hibiscus palustris* and *Typha angustifolia* are the predominant emergent species found intermittently throughout this site. Along the northeastern border of this site, adjacent to sites 15 and 16 (fig. 10), is a drainage ditch, lined with *Populus deltoides*, where *Sagittaria latifolia* and *Alisma subcordatum* occur.
- Site 11. A wood lot, in the northeast corner (fig. 10), of *Gleditsia triacanthos*, *Cornus drummondii*, *Rhus typhina*, *Impatiens capensis*, and *Sanicula canadensis*. The remainder of the site is composed of *Typha angustifolia*, *Calamagrostis canadensis*, and *Hibiscus palustris*.
- Sites 12 and 13. Marshes of *Hibiscus palustris* and *Typha angustifolia*, at both sites, with open water along their southern borders. A stand of *Populus deltoides* occurs at the southeastern end of Site 13.
- Site 14. A marsh meadow of *Calamagrostis canadensis*, *Phragmites communis*, *Scirpus cyperinus*, *Typha angustifolia*, *Erechtites hieracifolia*, *Impatiens capensis*, *Verbena hastata*, and *Bidens cernua*. *Populus deltoides* is present along the southern border, whereas *Sambucus canadensis* occurs intermittently along the northern border.
- Site 15. A marsh unit composed almost exclusively of *Hibiscus palustris* (fig. 6).
- Site 16. A marsh unit of *Pontederia cordata*, *Sagittaria latifolia*, *Hibiscus palustris*, and *Calamagrostis canadensis*, with some areas of open water.
- Site 17. A marsh unit of *Hibiscus palustris*, with dense stands of *Typha angustifolia* and *Calamagrostis canadensis*.
- Site 18. A marsh meadow with dense stands of *Calamagrostis canadensis*, *Typha angustifolia*, and *Hibiscus palustris*. Of less common occurrence are *Scirpus fluviatilis*, *S. atrovirens*, *Carex comosa*, and *C. stipata*. A stand of *Populus deltoides* occurs between Sites 18 and 15.
- Site 19. Squaw Island (fig. 1). *Nelumbo lutea*, *Typha angustifolia*, *Sparganium eurycarpum*, and *Hibiscus palustris* are predominant along the northern edge. At the east end is a mudflat where *Lindernia dubia*, *Ammannia coccinea*, *Eragrostis hypnoides*, *Eclipta alba*, and *Cyperus rivularis* are found. Along the south bank are mounds of dirt, on which *Polygonum lapathifolium*, *Artemisia biennis*, and *Boltonia asteroides* primarily occur. Some of the more common herbaceous species at the western end are *Apios americana*, *Amphicarpa bracteata* var. *comosa*, *Sicyos angulatus*, *Asarum canadense*, *Samolus parviflorus*, *Lippia lanceolata*, *Heliopsis helianthoides*, *Rudbeckia laciniata*, *Helianthus tuberosus*, *Helenium autumnale*, *Stachys tenuifolia*, *Scrophularia marilandica*, *Elymus canadensis*, *Physostegia virginiana*, and *Impatiens capensis*.

#### CHANGES IN THE MARSH FLORA SINCE 1901

Pieters' report (1901) includes a list of phanerogams (flowering plants), which enables scientists to visualize the floristic composition of western Lake Erie at the turn of the century, and to compare his findings with those of the present. After each reported phanerogam, Pieters indicates the locality or localities where each plant was found. If the phanerogam was of wide distribution, in terms of the western end of Lake Erie, then he designated it as "everywhere" or "common." Those species Pieters marked "head of Sandusky Bay", "Sandusky Bay", and "Upper Sandusky Bay" were probably within the Winous Point area at the turn of the century.

A comparison of the Winous Point flora today with that of 1901, as recorded by Pieters, is given in Table 1. All phanerogams on Pieters' list not indicated by one of the above notations to have been present here in 1901, and not found at Winous Point in the present study, were omitted from the comparison. Those

phanerogams found in the present study which are also on Pieters' list, but are not designated by one of the above notations, are given (table 1) as "not reported" for the Winous Point area in 1901. Where there are nomenclatural interpretations (based on Britton and Brown, 1913; Fernald, 1950; Fassett, 1957; and taxonomic monographs), Pieters' phanerogam is followed by the present name in parentheses. This comparison (table 1) between Pieters' list of phanerogams and the present catalogue of the vascular flora of Winous Point provides information concerning changes in the floristic composition that have occurred in the vicinity of Winous Point over the past sixty to seventy years.

TABLE 1

*Comparison of Pieters' list of phanerogams with that of the present*

Phanerogam	Pieters (1901)	Present
<i>Alisma plantago</i> L. ( <i>Alisma subcordatum</i> Raf.; <i>Alisma plantago-aquatica</i> var. <i>purviflorum</i> (Pursh) Farwell.)	not reported	common
<i>Apocynum cannabinum</i> L.	not reported	common
<i>Asclepias incarnata</i> L.	everywhere	common
<i>Boltonia asteroides</i> L'Her.	not reported	not uncommon
<i>Ceratophyllum demersum</i> L.	everywhere	very common
<i>Cyperus erythrorhizos</i> Muhl.	Upper Sandusky	common
<i>Cyperus strigosus</i> L.	Upper Sandusky Bay	common
<i>Deyeuxia canadensis</i> Munro. ( <i>Calamagrostis canadensis</i> (Michx.) Beauv.)	not reported	very common
<i>Eleocharis acicularis</i> R. Br.	not reported	common
<i>Elodea canadensis</i> Michx.	common	not found
<i>Eupatorium perfoliatum</i> L.	not reported	very common
<i>Heteranthera graminea</i> Vahl. ( <i>Heteranthera dubia</i> (Jacq.) MacM.)	everywhere	not uncommon
<i>Hibiscus moscheutos</i> L. ( <i>Hibiscus palustris</i> L.)	not reported	very common
<i>Ilysanthus riparia</i> Rafin. ( <i>Lindernia dubia</i> var. <i>riparia</i> (Raf.) Fern.)	Upper Sandusky Bay	uncommon
<i>Juncus torreyi</i> Coville.	not reported	common
<i>Leerzia oryzoides</i> Sw.	not reported	very common
<i>Lemna minor</i> L.	not reported	very common
<i>Lemna polyrhiza</i> L. ( <i>Spirodela polyrhiza</i> (L.) Schleid.)	common	very common
<i>Lemna trisulca</i> L.	not reported	common
<i>Lippia lanceolata</i> Michx.	Upper Sandusky Bay	not uncommon
<i>Mentha canadensis</i> L. ( <i>Mentha arvensis</i> var. <i>canadensis</i> (L.) Briq.)	Upper Sandusky Bay	common
<i>Myriophyllum spicatum</i> L. ( <i>Myriophyllum exallescens</i> (Fern.)	everywhere	very common
<i>Najas flexilis</i> Rost & Schmidt.	common	not found
<i>Najas flexilis robusta</i> Morong.	common	not found
<i>Nasturtium palustre</i> D. C. ( <i>Rorippa islandica</i> (Oeder) Borbas. either var. <i>hispida</i> or var. <i>fernaldiana</i> .)	Upper Sandusky Bay	not uncommon
<i>Nelumbium luteum</i> Willd. ( <i>Nelumbo lutea</i> (Willd.) Pers.)	head of Sandusky Bay	very common
<i>Nuphar advena</i> Ait.	common	common
<i>Nymphaea tuberosa</i> Paine.	not reported	very common
<i>Phalaris arundinacea</i> L.	not reported	very common
<i>Phragmites communis</i> Trin.	forms extensive associations	common
<i>Physostegia virginiana</i> Benth.	Upper Sandusky Bay	not uncommon
<i>Polygonum muhlenbergii</i> S. Wats. ( <i>Polygonum coccineum</i> Muhl.)	Sandusky Bay	common
<i>Polygonum acre</i> HBK. ( <i>Polygonum punctatum</i> Ell.)	Upper Sandusky Bay	common
<i>Populus monilifera</i> Ait. ( <i>Populus deltoides</i> Marsh.)	not reported	common



TABLE 1—Continued

Phanerogam	Pieters (1901)	Present
<i>Potamogeton amplifolius</i> Tuckerman.	Sandusky Bay	not found
<i>Potamogeton foliosus</i> Raf.	not reported	uncommon
<i>Potamogeton heterophyllus</i> Schreb. ( <i>Potamogeton gramineus</i> L.)	Sandusky Bay	not found
<i>Potamogeton interruptus</i> Kitaibel. ( <i>Potamogeton pectinatus</i> L.)	Sandusky Bay	very common
<i>Potamogeton lonchites</i> Tuckerman. ( <i>Potamogeton nodosus</i> Poir.)	Sandusky Bay	not uncommon
<i>Potamogeton lucens</i> L. ( <i>Potamogeton illinoensis</i> Morong)	Sandusky Bay	not found
<i>Potamogeton pectinatus</i> L.	everywhere	very common
<i>Potamogeton perfoliatus</i> L.	everywhere	not found
<i>Potamogeton robbinsii</i> Oakes.	Sandusky Bay	not found
<i>Potamogeton zizii</i> Roth ( <i>Potamogeton illinoensis</i> Morong)	Sandusky Bay	not found
<i>Potamogeton zosterifolius</i> Schum. ( <i>P. zosteriformis</i> Fern.)	everywhere	not found
<i>Ranunculus divaricatus</i> Schrank. ( <i>Ranunculus trichophyllus</i> Chaix.)	Sandusky Bay	not found
<i>Rumex verticillatus</i> L.	not reported	common
<i>Sagittaria arifolia</i> Nutt. ( <i>Sagittaria cuneata</i> Sheldon)	Upper Sandusky Bay	not found
<i>Sagittaria graminea</i> Michx.	Upper Sandusky Bay	not found
<i>Sagittaria latifolia</i> Willd.	not reported	very common
<i>Sagittaria rigida</i> Pursh	everywhere	rare
<i>Salix longifolia</i> Muhl. ( <i>Salix interior</i> Rowlee.)	frequent in several inches of water	common
<i>Salix nigra</i> Marsh.	not reported	common
<i>Salix wardii</i> Muhl. ( <i>Salix caroliniana</i> Michx.)	sometimes in shallow water	not found
<i>Scirpus atrovirens</i> Muhl.	not reported	common
<i>Scirpus fluviatilis</i> A. Gray	everywhere	common
<i>Scirpus eriophorum</i> Michx. ( <i>Scirpus</i> <i>cyperinus</i> (L.) Kunth.)	Upper Sandusky Bay	not uncommon
<i>Scirpus lacustris</i> L. ( <i>Scirpus validus</i> Vahl.)	everywhere	common
<i>Scirpus pungens</i> Vahl. ( <i>Scirpus americanus</i> Pers.)	everywhere	not uncommon
<i>Scutellaria galericulata</i> L. ( <i>Scutellaria</i> <i>epilobiifolia</i> A. Hamilton.)	not reported	common
<i>Sparganium eurycarpum</i> Engelm.	everywhere	very common
<i>Spartina cynosuroides</i> Willd. ( <i>Spartina pectinata</i> Link.)	Upper Sandusky Bay	common
<i>Typha angustifolia</i> L.	Rare, Upper Sandusky Bay	very common
<i>Typha latifolia</i> L.	everywhere	not uncommon
<i>Utricularia gibba</i> L.	Sandusky Bay	not found
<i>Utricularia vulgaris</i> L.	not reported	not uncommon
<i>Vallisneria spiralis</i> L. ( <i>Vallisneria americana</i> Michx.)	everywhere	not found
<i>Wolffia columbiana</i> Karst.	not reported	not uncommon
<i>Zizania aquatica</i> L.	Upper Sandusky Bay	uncommon

*Plants Reported By Pieters, But Not Now Found At Winous Point*

Plants reported by Pieters, but not found at present include:

*Elodea canadensis*

*Nais flexilis*

*Nais flexilis robusta*

*Potamogeton amplifolius*

*Potamogeton gramineus*

*Potamogeton robbinsii*

*Potamogeton zosteriformis*

*Ranunculus trichophyllus*

*Sagittaria graminea*

*Sagittaria cuneata*

*Utricularia gibba*

*Vallisneria americana*

These plants are predominantly submersed or partially emersed rooted aquatics. Since Pieters' time, Winous Point has been divided into a number of marsh units, each with its own drainage and pumping systems, which enable the wildlife management of the Winous Point Shooting Club to control the abundance of vegetation within any marsh unit. Accompanying the construction of these marsh units came the introduction of carp (*Cyprinus carpio* L.), a fish species known to uproot vegetation, particularly rooted aquatics. Carp are suited to the warm and turbid waters of Lake Erie (Trautman, 1957), and they contribute to the overall turbidity by stirring up the bottom mud and keeping it in suspension. This turbidity results in a reduction of the amount of light that can penetrate below the water surface, thus reducing the photosynthetic rates of aquatic plants.

The introduction of carp into the marshes of Winous Point and the effect these fish have had on aquatic plants are described in the following excerpt from a letter to the Winous Point Shooting Club by C. W. Sadler, written in 1932:

I was on the State Fish Commission in 1886-87. I remember *with regret* that the Winous Point Club wanted some carp-fry very much, to put into the creeks and marsh waters. I suppose the club thought it [the introduction of carp] would increase the value of the "fishing rights" it leased to fishermen. . . . But of course, they [carp] were soon introduced in all the rivers, streams, bays and waters all along Lake Erie to beyond Toledo. But no one seemed to *know anything* about the destructive habits of the big carp—their plowing and digging and "rooting up" the bottom vegetations—everywhere—and muddying up the water, as they did that beautiful "Mud Creek Bay."

Where carp population levels were high, King and Hunt (1967) found that the leafy pondweed, *Potamogeton foliosus*, was always less abundant than in places where carp populations were low. *Potamogeton pectinatus* and *P. crispus*, on the other hand, appeared to be little affected by carp activity (King and Hunt, 1967). The carp may be contributing to the elimination of leafy pondweeds (*Potamogeton amplifolius*, *P. gramineus*, *P. robbinsii*, *P. zosteriformis*), as well as of other aquatics of similar habit, such as arrowheads (*Sagittaria graminea* and *S. cuneata*) and naiads (*Nais flexilis* and *N. flexilis robusta*).

Increased turbidity and the presence of carp may also explain the absence of *Vallisneria americana*. Pieters said wild celery (*Vallisneria americana*) was found everywhere and C. W. Sadler (1932) wrote, "the Mud-Creek Bay in those days was more or less protected by floating grasses, and lilies, and wild celery [*Vallisneria americana*] with clear, open spots." Turbidity and probably also, to some extent, the up-rooting of *Vallisneria* have contributed to its elimination from the upper Sandusky Bay.

*Plants Found At Winous Point In Present Study, But Not Reported  
By Pieters*

With the extensive construction of dikes and the drainage ditches adjacent to them, disturbed habitats that were not common prior to 1900 were created. Species such as:

<i>Apocynum cannabinum</i>	<i>Salix nigra</i>
<i>Phalaris arundinacea</i>	<i>Scutellaria epilobiifolia</i>
<i>Populus deltoides</i>	

invaded and are now significant components of the dike flora. In the drainage ditches that parallel the dikes are found the following species:

<i>Alisma subcordatum</i>	<i>Rumex verticillatus</i>
<i>Boltonia asteroides</i>	<i>Sagittaria latifolia</i>
<i>Eupatorium perfoliatum</i>	<i>Scirpus atrovirens</i>
<i>Juncus torreyi</i>	

Pieters did not report *Nymphaea tuberosa* or *Hibiscus palustris* from the Winous Point area, though the former was probably a part of the marsh flora then, as

suggested by the use of the common name "water-lilies" in the legend of Brennan's map (1894). *Hibiscus palustris* (marsh mallow) is found in most of the marshes in shallow stagnant water or on exposed mudflats. Over the past sixty to seventy years, the marsh mallow has become one of the dominant floral components at Winous Point.

Several marsh species not reported by Kellerman (1894), Moseley (1899), and Pieters (1901) have moved into the western end of Lake Erie since the turn of the century. Those species found at Winous Point are:

*Butomus umbellatus*  
*Lythrum salicaria*  
*Najas minor*  
*Polamogeton crispus*  
*Rumex maritimus* var. *fueginus*

*Changes In The Abundance Of Certain Species Since The Turn Of  
The Century*

*Zizania aquatica* (wild rice) and *Phragmites communis* (reed) are now less abundant than at the turn of the century. *Phragmites communis* use to form "extensive associations," but is now found only in scattered patches at Winous Point. *Calamagrostis canadensis* (blue-joint) and *Leersia oryzoides* (rice-cutgrass) are today very common grasses.

Changes in the abundance of different *Typha* and *Sagittaria* species have occurred. Moseley (1899) reported *Typha latifolia* as common and *Typha angustifolia* as scarce. Pieters (1901) listed *T. latifolia* as everywhere and *T. angustifolia* as rare. *T. angustifolia* is now very common, whereas *T. latifolia* is found only sporadically. Pieters (1901) reported *Sagittaria rigida* as everywhere, while *Sagittaria latifolia* was reported only for Squaw Harbor and East Harbor. Today, *S. rigida* is rare and *S. latifolia* is common. The reasons for the changes in abundance of these species are not known, but deserve investigation.

*Species Apparently Overlooked By Pieters*

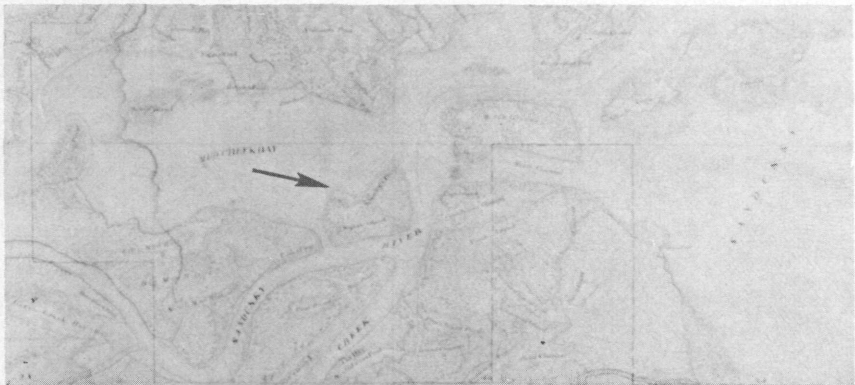
Several species which are found at Winous Point today might have been present in 1901, having been overlooked by Pieters because they are small and generally inconspicuous. These species are *Eleocharis acicularis*, *Lemna minor*, *L. trisulca*, and *Woffia columbiana*.

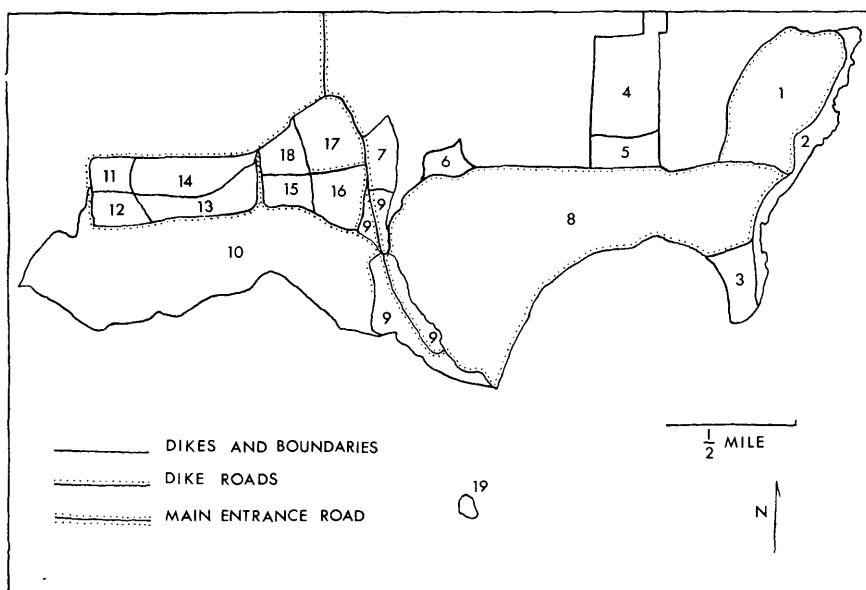
*Pontederia cordata* (pickerelweed) was known in the field by Pieters, who referred to it in the text as occurring in the swamp on the south side of the channel at East Harbor, but did not include it in his list. Kellerman (1894) reported that *P. cordata* was frequent in the marshes along the shores of Lake Erie. Pickerelweed is a very common marsh component at Winous Point today.

PHYSIOGRAPHIC CHANGES

Changes in the floristic composition can be accounted for in part by examining the physiographic changes that have occurred over the past 150 years in the upper Sandusky Bay area. These changes are illustrated by comparing the maps of 1820 (fig. 7), 1873 (fig. 8), and 1966 (fig. 9). These physiographic changes, which have undoubtedly contributed to the elimination of certain marsh plants intolerant of silty water, are the result of at least three factors: (1) the increase in the flow rates (Langlois, 1954) of Muddy Creek and of the Sandusky River into the western end of the Sandusky Bay because of the construction of drainage ditches in the Black Swamp (Offutt, 1967); (2) the erosive effect of wave and current action (Moseley, 1903) which is particularly pronounced during storms; and (3) man's intervention to prevent the loss of land through the construction of dikes.

In 1820 (fig. 7), what is now known as Squaw Island (marked with an arrow) was part of a peninsula that extended eastward along the mouth of the Sandusky





River. Between 1820 and 1873 (fig. 8), a channel had formed, separating the newly formed Squaw Island from the peninsula. Wave action in the bay, accompanied by strong northeast winds, has probably eroded Squaw Island to its present area of approximately three acres (fig. 9).

Even more striking is the complete disappearance of Eagle Island. It is shown on the 1820 map (fig. 7, marked by a star), when it had an area of 134 acres and lay northeast of Squaw Island. Eagle Island was located where the waves of the bay attained considerable force, so that it was buffeted during every northeast storm, especially those from 1858 to 1862 (Moseley, 1905).

Dikes constructed by the Winous Point Shooting Club have aided in the reclamation of some of the extensive marsh areas that existed at the mouth of the Sandusky River at the turn of the century (Brennan, 1894). The dikes afford protection for various marsh habitats that would otherwise be greatly reduced or destroyed by wave action.

#### EXPLANATION OF FIGURES

(Figures 7, 8, and 9 at left. Figure 10 above)

- FIGURE 7. A map surveyed and made by Sylvanus Bourne of Wareham, Massachusetts. June, 1820. Presented to The Ottawa Shooting Club by his sons E. H. Bourne and S. Bourne. Squaw Island, then a peninsula, is marked with an arrow; Eagle Island is marked with a star. Map at the Winous Point Shooting Club, Ottawa County, Ohio.
- FIGURE 8. Map of Sandusky Marsh. January, 1873. Township No. 6 N. Range XVI E. Ohio. Author unknown. Squaw Island is marked with an arrow. Map at the Winous Point Shooting Club, Ottawa County, Ohio.
- FIGURE 9. Taken of a map, at the Winous Point Shooting Club, entitled Winous Point & Ottawa Shooting Clubs, areas in Sandusky & Ottawa Counties, Ohio. Date of Photography, June 10, 1966. Aerial Surveys, Inc., Cleveland, Ohio. Squaw Island is marked with an arrow.
- FIGURE 10. An outline map showing, that part of the land owned by the Winous Point Shooting Club, where this study was conducted (compare with fig. 9). Numbers refer to sites of floristic study.

## CATALOGUE OF THE VASCULAR FLORA OF WINOUS POINT

## Explanation of Catalogue

A catalogue of the species of vascular plants observed in the Winous Point area follows the species arranged in the order presented in *Gray's Manual of Botany*, eighth edition (Fernald, 1950). Those species considered of foreign origin, as given in Fernald (1950), are indicated by an asterisk, with the probable original source mentioned in parentheses. A plus sign has been placed before those species that are cultivated or escaped from cultivation. Binomials without any designation represent species that are native to the United States. Common names for each taxon are taken from Fernald (1950) or Weishaupt (1960).

After each plant name are listed the location(s), by section number(s) (in Bay Township, Ottawa and Sandusky Counties), where the plant was collected. The number assigned to each plant in the field appears in parentheses after the location. In the case of duplicate specimens, the number of duplicates is noted, after the hyphen, following the specimen number. The month(s) when each plant was collected serve(s) in most cases as an indicator of flowering time.

One of five frequency values is assigned to each taxon observed within the Winous Point area. These include:

- very common —plants found at almost all sites.
- common —plants found at most sites.
- not uncommon —plants found at more than several sites.
- uncommon —plants found at one to several sites.
- rare —one to several plants found at one or rarely two sites.

Abbreviations used in the catalogue are:

- |                          |                |   |
|--------------------------|----------------|---|
| Adv. —adventive          | NE             | —northeast  |
| Am. —America or American | NW             | —northwest  |
| C —central               | ¼ (one-fourth) | —refers to a quarter of a section within Bay Township |
| E —east or eastern       |                |   |
| Eu. —Europe              |                |   |
| Introd. —introduced      | Sec.           | —section  |
| Is. —Island              | S              | —south  |
| Natzd. —naturalized      | SC             | —south central  |
| N —north                 | SE             | —southeast  |
| NC —north central        | SW             | —southwest  |
|                          | W              | —west   |

CATALOGUE  
PTERIDOPHYTA**Equisetaceae**—Horsetail Family

*Equisetum arvense* L. NW ¼ Sec. 15(923) in a ditch along the entrance road to Winous Point off Route 53. May.  
Field Horsetail, Devil's Guts. uncommon

**Polypodiaceae**—Fern Family

*Onoclea sensibilis* L. NC Sec. 22(891-2). Also seen along the dike which extends along the northern border of Sec. 23. May.  
Sensitive Fern. uncommon

**Salviaceae**—Salvinia Family

*Azolla caroliniana* Willd. SC Sec. 14(1586-2, 1621). It covered the surface of a drainage ditch. Aug.  
Water-Velvet, Water-Fern. rare

## SPERMATOPHYTA—GYMNOSPERMAE

**Pinaceae**—Pine Family

\**Taxodium distichum* (L.) Richard. C sec. 22(1708). Sept. Bald Cypress. 1,000 seedlings were planted within 200 feet to each side of main entrance road.  
*Juniperus virginiana* L. NC Sec. 22(921). One seedling was spotted by Dr. R. Stuckey. May.  
Red Cedar. rare

## SPERMATOPHYTA—ANGIOSPERMAE MONOCOTYLEDONEAE

**Typhaceae**—Cat-Tail Family

*Typha latifolia* L. NW ¼ Sec. 22(615-2). July.  
Broad-leaved Cat-tail, Cat-tail Flag. not uncommon  
*Typha angustifolia* L. SE ¼ Sec. 22(599-2). Squaw Is. (1529). June, July.  
Narrow-leaved Cat-tail, Cat-tail Flag. very common

**Sparganiaceae**—Bur-Reed Family

*Sparganium eurycarpum* Engelm. SE ¼ Sec. 22(558-2). Squaw Is. (987). June, Aug.  
Bur-Reed. very common

**Zosteraceae**—Pondweed Family

*Potamogeton pectinatus* L. NE  $\frac{1}{4}$  Sec. 21(730); NE  $\frac{1}{4}$  Sec. 22 (778-2, 779); NE  $\frac{1}{4}$  Sec. 23(695-2)  
Squaw Is. (934, 935). July, Aug.  
Sago Pondweed. very common

*Potamogeton foliosus* Raf. NE  $\frac{1}{4}$  Sec. 22(780). Aug.

Pondweed. uncommon

\**Potamogeton crispus* L. NE  $\frac{1}{4}$  Sec. 21(825); SE  $\frac{1}{4}$  Sec. 22 (569-2). June, Sept. (Natzd. from Eu.)  
Pondweed. very common

*Potamogeton nodosus* Poir. NE  $\frac{1}{4}$  Sec. 21(827-2); C-CW Sec. 21 (1567). Aug., Sept.  
Pondweed. not uncommon

**Najadaceae**—Naiad Family

\**Najas minor* All. NE  $\frac{1}{4}$  Sec. 21(826); NE  $\frac{1}{4}$  Sec. 22(852). Aug., Sept. (Natzd. from old world)  
Naiad. uncommon

**Alismataceae**—Water-Plantain Family

*Alisma subcordatum* Raf. NW  $\frac{1}{4}$  Sec. 22(688-2). Squaw Is. (1661). July, Sept.

Water- or Mud-Plantain. common

*Lophotocarpus calycinus* (Engelm.) J. G. Sm. NE  $\frac{1}{4}$  Sec. 21(828-2); N Sec. 23(796-2). Aug., Sept.

uncommon

*Sagittaria rigida* Pursh. EC Sec. 23(1690-2). Sept.

Arrowhead. rare

*Sagittaria latifolia* Willd. NW  $\frac{1}{4}$  Sec. 22(832-2, 833, 839-2). Squaw Is. (1549, 1592). July, Aug., Sept.

Arrowhead, Swamp-potato, Wapato, Duck-potato. very common

**Butomaceae**—Flowering Rush Family

\**Butomus umbellatus* L. There is a large stand in NE  $\frac{1}{4}$  Sec. 23 (540-2); SE  $\frac{1}{4}$  Sec. 22(563).  
June. (Natzd. from Eu.)

Flowering Rush. common

**Hydrocharitaceae**—Frog's-Bit Family

*Elodea nuttallii* (Planch.) St. John. NC Sec. 22(1689-2). Sept.

Waterweed, Water-Thyme, Ditch-moss. uncommon

**Gramineae**—Grass Family

\**Bromus inermis* Leyss. C-SE  $\frac{1}{4}$  Sec. 22(591-2). July. (Intro. and natzd. from Eu.)

Awnless or Hungarian Brome-Grass. not uncommon

\**Bromus commutatus* Schrad. C Sec. 22(904); SE  $\frac{1}{4}$  Sec. 22(527-2); NW  $\frac{1}{4}$  Sec. 23(619-2).  
June, July. (Natzd. from Eu.)

Brome-Grass. not uncommon

\**Bromus tectorum* L. C Sec. 22(906-2). May. (Natzd. from Eu.)

Brome-Grass. non uncommon

\**Festuca elatior* L. NW  $\frac{1}{4}$  Sec. 23(1712). Oct. (Natzd. from Eu.)

Tall-Fescue. not uncommon

*Glyceria striata* (Lam.) Hitchc. SW  $\frac{1}{4}$  Sec. 14(648-2); C Sec. 22(905, 914-2). May, June, July.

Manna-Grass, Fowl-Meadow Grass. common

\**Poa compressa* L. Squaw Is. (953). Aug.

Canada Bluegrass, Wiregrass. uncommon

*Poa pratensis* L. C Sec. 22(917); SE  $\frac{1}{4}$  Sec. 22(1573). Squaw Is. (1522, 1561). May, July.  
Kentucky Bluegrass, Speargrass. common

\**Dactylis glomerata* L. Squaw Is. (1523). July. (Intro. and natzd. from Eu.)

Orchard-Grass. uncommon

*Eragrostis hypnoides* (Lam.) BSP. SE  $\frac{1}{4}$  Sec. 14(1703). Squaw Is. (951). Aug., Sept.

Love-Grass. not uncommon

*Eragrostis pectinacea* (Michx.) Nees. C Sec. 22(1611, 1634). Aug.

Love-Grass. common

\**Phragmites communis* Trin. NE  $\frac{1}{4}$  Sec. 22(737-2). Squaw Is. (1552). July, Aug. (Eurasia)  
Reed. common

*Agropyron repens* (L.) Beauv. Squaw Is. (1525). July.

Witch-Grass; Couch-, Quitch-, or Quick-Grass. uncommon

*Lolium perenne* L. NE  $\frac{1}{4}$  Sec. 21(614-2). July.

Perennial Rye-Grass. common

*Hordeum jubatum* L. NE  $\frac{1}{4}$  Sec. 21(684-2); SE  $\frac{1}{4}$  Sec. 22(520-2). Squaw Is. (984, 1557).  
June, July, Aug.

Squirrel-tail Grass. common

*Elymus virginicus* L. SW  $\frac{1}{4}$  Sec. 14(643-2); SW  $\frac{1}{4}$  Sec. 15(752). Squaw Is. (977, 1516).  
July, Aug.

Terrell Grass. common

*Elymus canadensis* L. Squaw Is. (1524). July.

Wild Rye, Lyme-Grass. uncommon



- Sphenopholis intermedia* Rydb. C Sec. 22(907, 915-2). May, June.  
Slender Wedge-Grass. not uncommon
- Calamagrostis canadensis* (Michx.) Nutt. SE  $\frac{1}{4}$  Sec. 14(630-2); SW  $\frac{1}{4}$  Sec. 15(853-2); C Sec. 22(1916-2); NE Sec. 22(554-2); NE  $\frac{1}{4}$  Sec. 23(624). Squaw Is. (624). June, July, Sept.  
Blue-joint. very common
- Agrostis alba* L. SW  $\frac{1}{4}$  Sec. 15(748-2); SE  $\frac{1}{4}$  Sec. 22(1569). July, Aug.  
Redtop. common
- Cinna arundinacea* L. C Sec. 22(1618-2). Aug.  
Wood Reedgrass. common
- \**Phleum pratense* L. SW  $\frac{1}{4}$  Sec. 15(751-2). Aug. (Intro. and natzd. from Eu.)  
Common Timothy, Herds' Grass. common
- Alopecurus aequalis* Sobol. C Sec. 22(903-2). May.  
Foxtail. uncommon
- Muhlenbergia frondosa* (Poir.) Fern. Squaw Is. (1637). Sept.  
Wirestem Muhly. not uncommon
- Spartina pectinata* Link. NE  $\frac{1}{4}$  Sec. 21(720-2). July.  
Slough-Grass, Fresh-water Cord-Grass. common
- \**Eleusine indica* (L.) Gaertn. C Sec. 22(1612). Aug. (Natzd. from old world)  
Wiregrass, Goose-Grass, Yard-Grass. not uncommon
- Phalaris arundinacea* L. NC Sec. 22(912); SE  $\frac{1}{4}$  Sec. 22(528-2). Squaw Is. (1508). June, July.  
Reed-Canary-Grass. very common
- Phalaris arundinacea* L. forma *variegata* (Parnell) Druce. SW  $\frac{1}{4}$  Sec. 22(901). June.  
Reed-Canary-Grass. uncommon
- Leersia virginica* Willd. C. Sec. 22(1613-2). Aug.  
Virginia Cutgrass, Whitegrass. not uncommon
- Leersia oryzoides* (L.) Sw. NW  $\frac{1}{4}$  Sec. 22(841-2). Squaw Is. (1654). Sept.  
Rice-Cutgrass. very common
- Zizania aquatica* L. NW  $\frac{1}{4}$  Sec. 23(798-4). Aug.  
Wild Rice, Water-Oats. uncommon
- \**Digitaria sanguinalis* (L.) Scop. C Sec. 22 (observed). Squaw Is. (1601-2). Aug. (Natzd. from old world)  
Crab-Grass, Finger-Grass. not uncommon
- Panicum dichotomiflorum* Michx. NE  $\frac{1}{4}$  Sec. 21(801-2). Squaw Is. (1636-2). Aug., Sept.  
Panic-Grass. not uncommon
- Panicum capillare* L. SE  $\frac{1}{4}$  Sec. 14(812-2). Squaw Is. (observed). Sept.  
Tumble Panic Grass, Old-witch Grass. common
- \**Echinochloa crusgalli* (L.) Beauv. NE  $\frac{1}{4}$  Sec. 21(718-2, 719-2). Squaw Is. (1589, 1655). July, Aug., Sept. (Natzd. from old world)  
Barnyard-Grass. common
- +*Echinochloa walteri* (Pursh) Nash. SE  $\frac{1}{4}$  Sec. 14(836-2). Squaw Is. (1656). Sept.  
Barnyard-Grass. common
- \**Setaria glauca* (L.) Beauv. SC Sec. 15(1701-2). Sept. (Natzd. from Eurasia)  
Foxtail, Pigeon-Grass. common
- \**Setaria viridis* (L.) Beauv. SE  $\frac{1}{4}$  Sec. 14(835-2); NE  $\frac{1}{4}$  Sec. 21(686-2). July, Sept. (Natzd. from Eurasia)  
Green Foxtail, Bottle-Grass. common
- \**Setaria faberii* Herrm. SC Sec. 15(1700). Sept. (Natzd. from e. Asia)  
Foxtail. common
- \*\**Sorghum vulgare* Pers. SE  $\frac{1}{4}$  Sec. 14(840-2). Sept. (Intro. from Eurasia)  
Sorghum, Broom-Corn. uncommon
- +*Zea mays* L. SC Sec. 15(1705-2). Sept.  
Maize, Indian Corn. common
- Cyperaceae**—Sedge Family
- Cyperus diandrus* Torr. SE  $\frac{1}{4}$  Sec. 14(1677-2); NE  $\frac{1}{4}$  Sec. 21(837-2). Aug., Sept.  
Galingale, Umbrella-Sedge. common
- Cyperus rivularis* Kunth. Squaw Is. (1594-2, 1640). Aug., Sept.  
Galingale, Umbrella-Sedge. not uncommon
- Cyperus erythrorhizos* Muhl. SW  $\frac{1}{4}$  Sec. 15(677-2); NW  $\frac{1}{4}$  Sec. 23(797-3). Squaw Is. (1650). July, Aug., Sept.  
Galingale, Umbrella-Sedge. common
- Cyperus odoratus* L. SE  $\frac{1}{4}$  Sec. 14(822-2, 1673-2); NW  $\frac{1}{4}$  Sec. 22(691-2, 692-2, 1616). Squaw Is. (1604). July, Aug., Sept.  
Galingale, Umbrella-Sedge. common
- Cyperus engelmanni* Steud. SW  $\frac{1}{4}$  Sec. 13 (Stuckey, 7980). Oct., 1968.  
Galingale, Umbrella-Sedge. rare
- Cyperus esculentus* L. SE  $\frac{1}{4}$  Sec. 14(1672-2). Sept.  
Yellow Nut-Grass. not uncommon
- Cyperus strigosus* L. C Sec. 22(1675-3). Squaw Is. (936, 1605, 1646). Sept., Aug.  
Galingale, Umbrella-Sedge. common

- Eleocharis acicularis* (L.) R. & S. NE  $\frac{1}{4}$  Sec. 22(784-2). Aug.  
Spike-Rush. common
- Eleocharis obtusa* (Willd.) Schultes. SW  $\frac{1}{4}$  Sec. 14(640-2); SW  $\frac{1}{4}$  Sec. 15(584-2); C Sec. 22(598); SE  $\frac{1}{4}$  Sec. 22(600-2); NE  $\frac{1}{4}$  Sec. 22(781-2). Squaw Is. (1648). June, July, Aug., Sept.  
Spike-Rush. very common
- Eleocharis smallii* Britt. EC Sec. 23(1674). Squaw Is. (1563, 1564). July, Sept.  
Spike-Rush. rare
- Eleocharis calva* Torr. SW  $\frac{1}{4}$  Sec. 15(610-2); NW  $\frac{1}{4}$  Sec. 22(693-2). Squaw Is. (1512). July.  
Spike-Rush. very common
- Scirpus americanus* Pers. C-WC Sec. 21(1565). Squaw Is. (1534, 1550). July, Aug.  
Three-square, Sword-Grass, Chair-Maker's Rush. not uncommon
- Scirpus validus* Vahl. EC Sec. 22(589-2). Squaw Is. (948). July, Aug.  
Soft-stem Bulrush, Great Bulrush. common
- Scirpus acutus* Muhl. NE  $\frac{1}{4}$  Sec. 21(877-2); NW  $\frac{1}{4}$  Sec. 23(623-2). Squaw Is. (945). June, July.  
Hard-stem Bulrush. common
- Scirpus fluviatilis* (Torr.) Gray. SW  $\frac{1}{4}$  Sec. 14(1579-2); SW  $\frac{1}{4}$  Sec. 15(587-2, 601-2). Squaw Is. (992, 1546). June, July.  
River-Bulrush. common
- Scirpus atrovirens* Willd. C Sec. 22(878); SW  $\frac{1}{4}$  Sec. 15(602-2). Squaw Is. (1547). June, July.  
Dark-green Bulrush. common
- Scirpus lineatus* Michx. NC Sec. 22(876-2); NW  $\frac{1}{4}$  Sec. 22(622-2). June, July.  
Bulrush. not uncommon
- Scirpus cyperinus* (L.) Kunth. NE  $\frac{1}{4}$  Sec. 22(791-2). Aug.  
Bulrush, Wool-rush. not uncommon
- Carex rosea* Schkuhr. C Sec. 22(866-3). May.  
Sedge. not uncommon
- Carex muhlenbergii* Schkuhr. C Sec. 22(862). May.  
Sedge. uncommon
- Carex vulpinoidea* Michx. C Sec. 22(869); SE  $\frac{1}{4}$  Sec. 22(672-2). Squaw Is. (1503). June, July.  
Sedge. common
- Carex stipata* Muhl. SE  $\frac{1}{4}$  Sec. 15(606-2); SW  $\frac{1}{4}$  Sec. 15(588-2); NC Sec. 22(874-2). May, June, July.  
Sedge. common
- Carex tribuloides* Wahlenb. C Sec. 22(1606). Aug.  
Sedge. not uncommon
- Carex cristatella* Britt. SW  $\frac{1}{4}$  Sec. 15(575-2); NC Sec. 22(870-2); NW  $\frac{1}{4}$  Sec. 22(621-2). June, July.  
Sedge. not uncommon
- Carex lanuginosa* Michx. NC Sec. 22(875-3). May.  
Sedge. not uncommon
- Carex granularis* Muhl. NC Sec. 22(868). May.  
Sedge. uncommon
- Carex amphibola* Steud. var. *turgida* Fern. NC Sec. 22(872-3). May.  
Sedge. not uncommon
- Carex frankii* Kunth. SC Sec. 22(709-2); SE  $\frac{1}{4}$  Sec. 22(669). July.  
Sedge. common
- Carex lacustris* Willd. NC Sec. 22(873-2). May.  
Sedge. not uncommon
- Carex atherodes* Spreng. NC Sec. 22(871). May.  
Sedge. uncommon
- Carex comosa* Boott. SW  $\frac{1}{4}$  Sec. 15(1580-6). July.  
Sedge. common
- Carex grayii* Carey. C Sec. 22(711, 1607). July, Aug.  
Sedge. common
- Araceae**—Arum Family
- Arisaema atrorubens* (Ait.) Blume. C Sec. 22(710-2). July.  
Jack-in-the-Pulpit, Indian-turnip. not uncommon
- Lemnaceae**—Duckweed Family
- Spirodela polyrrhiza* (L.) Schleid. SE  $\frac{1}{4}$  Sec. 22(571); NE  $\frac{1}{4}$  Sec. 23(636). Squaw Is. (989). June, July, Aug.  
Greater Duckweed, Water-flaxseed. very common
- Lemna trisulca* L. C Sec. 22(859); NE  $\frac{1}{4}$  Sec. 23(633). April, July.  
Star-Duckweed. common
- Lemna minor* L. SE  $\frac{1}{4}$  Sec. 22(572); NE  $\frac{1}{4}$  Sec. 23(634). June, July.  
Lesser Duckweed. very common.

- Wolffia columbiana* Karst. NE  $\frac{1}{4}$  Sec. 23(634). July.  
Watermeal. not uncommon
- Commelinaceae**—Spiderwort Family
- \**Commelina communis* L. SE  $\frac{1}{4}$  Sec. 22(674-2). July. (Natzd. from Asia)  
Dayflower. not uncommon
- Pontederiaceae**—Pickerelweed Family
- Pontederia cordata* L. SE  $\frac{1}{4}$  Sec. 22(564-2). June.  
Pickerelweed very common
- Heteranthera dubia* (Jacq.) MacM. NE  $\frac{1}{4}$  Sec. 21(694-2). July.  
Water-Stargrass. not uncommon
- Juncaceae**—Rush Family
- Juncus tenuis* Willd. SW  $\frac{1}{4}$  Sec. 14(850); C Sec. 22(864-2); SE  $\frac{1}{4}$  Sec. 22(1571). May, July.  
Rush, Bog-Rush. common
- Juncus dudleyi* Wieg. SW  $\frac{1}{4}$  Sec. 14(641-2); SE  $\frac{1}{4}$  Sec. 22(670, 1572). Squaw Is. (1541).  
July. common
- Rush, Bog-Rush. common
- Juncus torreyi* Coville. SE  $\frac{1}{4}$  Sec. 22(673-2, 1577, 1578, 1582, 1665). Squaw Is. (1543). July,  
Sept. common
- Rush, Bog-Rush. common
- Liliaceae**—Lily Family
- Allium canadense* L. C Sec. 22(885). May.  
Meadow Garlic, Wild Garlic. not uncommon
- \**Allium sativum* L. N Sec. 22(697-2). July. (Introd. from old world)  
Garlic. not uncommon
- Erythronium albidum* Nutt. C Sec. 22(856-3) in woody area along main entrance road to Winous  
Point. April. common
- White Dog's-Tooth-Violet. common
- \**Ornithogalum umbellatum* L. C Sec. 22(890-2) in an opening along main entrance road. May.  
(Introd. and natzd. from Eu.)
- Star-of-Bethlehem. not uncommon
- \**Asparagus officinalis* L. NW  $\frac{1}{4}$  Sec. 23(631-2). July. (Introd. from Eu.)  
Garden Asparagus. not uncommon.
- Smilacina racemosa* (L.) Desf. C Sec. 22(1608) in a woody area. Aug.  
False Solomon's-Seal. uncommon
- Smilax ecirrhata* (Engelm.) S. Wats. C Sec. 22(1537) in a woody area. Aug.  
Greenbrier, Catbrier. not uncommon
- Iridaceae**—Iris Family
- Iris virginica* L. var. *shrevei* (Small) E. Anders. NC Sec. 22(899-5); SE  $\frac{1}{4}$  Sec. 22(561-2).  
Squaw Is. (979). June, Aug. common
- Southern Blue Flag. common

## SPERMATOPHYTA—ANGIOSPERMAE DICOTYLEDONEAE

- Salicaceae**—Willow Family
- Salix nigra* Marsh. SW  $\frac{1}{4}$  Sec. 14(879); NE  $\frac{1}{4}$  Sec. 22(880). Squaw Is. (932). April, May,  
July. common
- Black Willow. common
- Salix amygdaloides* Anderss. N Sec. 22(551-2). Squaw Is. (931). June, July.  
Peach-leaved Willow. common
- \**Salix fragilis* L. Squaw Is. (930). July. (Introd. from Eu.)  
Crack-Willow. uncommon
- \**Salix alba* L. SE  $\frac{1}{4}$  Sec. 22(518-2). June. (Introd. and natzd. from Eu.)  
White Willow. not uncommon
- Salix interior* Rowlee. SW  $\frac{1}{4}$  Sec. 15(533-2); NE  $\frac{1}{4}$  Sec. 23(663-2) along the south dike. Squaw  
Is. (1517, 1548). June, July. common
- Sandbar-Willow. common
- Salix discolor* Muhl. Squaw Is. (1531). July.  
Large Pussy-Willow. uncommon
- Populus deltoides* Marsh. SE  $\frac{1}{4}$  Sec. 22(510-2). Squaw Is. (1558). June.  
Cottonwood, Necklace-Popular. common
- Juglandaceae**—Walnut Family
- Juglans cinerea* L. Squaw Is. (1535) one large tree about thirty feet tall. July (in fruit).  
Butternut, White Walnut. uncommon
- Juglans nigra* L. C Sec. 22(1633-2) specimen collected was from a sprout. Aug.  
Black Walnut. uncommon
- Carya ovata* (Mill.) K. Koch. SW  $\frac{1}{4}$  Sec. 14(647-2). July.  
Shagbark Hickory, Shellbark Hickory. not uncommon
- Fagaceae**—Beech Family
- Quercus macrocarpa* Michx. SW  $\frac{1}{4}$  Sec. 14(642-2). July.  
Bur Oak, Mossy-cup Oak. not uncommon

- Quercus bicolor* Willd. NE  $\frac{1}{4}$  Sec. 22(539-2) along the dike by the Great Blue Heron Rookery.  
SW  $\frac{1}{4}$  Sec. 14(644-2). June, July.  
Swamp-White Oak not uncommon
- Quercus prinus* L. SW  $\frac{1}{4}$  Sec. 14(649-2). July.  
Chesnut-Oak, Rock-Chestnut Oak. uncommon
- Quercus palustris* Muenchh. SW  $\frac{1}{4}$  Sec. 14(646-2); NE  $\frac{1}{4}$  Sec. 22(548-2) along the dike. June, July.  
Pin-Oak, Spanish Oak. not uncommon
- Ulmaceae**—Elm Family
- Ulmus rubra* Muhl. SE  $\frac{1}{4}$  Sec. 22(519-2). Squaw Is. (1530). June, July.  
Slippery Elm, Red Elm. not uncommon
- Ulmus americana* L. SW  $\frac{1}{4}$  Sec. 15(586-2) along the dike. June.  
American Elm, White Elm. not uncommon
- Celtis occidentalis* L. SW  $\frac{1}{4}$  Sec. 15(595-2). Squaw Is. (1515). July.  
Hackberry, Sugarberry, Nettle-tree. common
- Moraceae**—Mulberry Family
- \**Morus alba* L. SW  $\frac{1}{4}$  Sec. 15(582-2). Squaw Is. (1511). June, July. (Introd. and natzd. from Asia)  
White Mulberry. common
- Urticaceae**—Nettle Family
- Urtica procera* Muhl. SE  $\frac{1}{4}$  Sec. 22(531-2, 1584). Squaw Is. (969). June, July, Aug.  
Nettle. common
- Pilea pumila* (L.) Gray. NC Sec. 22(1706-3). Squaw Is. (1649). Sept.  
Richweed, Clearweed, Coolwort. not uncommon
- Boehmeria cylindrica* (L.) Sw. SE  $\frac{1}{4}$  Sec. 14(1668); C Sec. 22(715-2, 774-2, 1619) in woody area. July, Aug., Sept.  
Bog-Hemp. common
- Parietaria sylvanica* Muhl. NC Sec. 22(1667-2). Sept.  
Pellitory. not uncommon
- Aristolochiaceae**—Birthwort Family
- Asarum canadense* L. Squaw Is. (975). Aug.  
Wild Ginger. uncommon
- Polygonaceae**—Buckwheat Family
- Rumex verticillatus* L. SE  $\frac{1}{4}$  Sec. 22(567-2); NE  $\frac{1}{4}$  Sec. 23(667-2). Squaw Is. (1651). June, July, Sept.  
Swamp-Dock, Water-Dock. common
- Rumex orbiculatus* Gray. SE  $\frac{1}{4}$  Sec. 14(1681-2). Sept.  
Great Water-Dock. not uncommon
- \**Rumex crispus* L. SE  $\frac{1}{4}$  Sec. 22(522-2). Squaw Is. (1544, 1635). June, July, Sept. (Natzd. from Eu.)  
Curled Dock, Yellow Dock. very common
- Rumex maritimus* L. var. *fueginus* (Phil.) Dusen. SE  $\frac{1}{4}$  Sec. 14(1688-2); NW  $\frac{1}{4}$  Sec. 23(625-4). July, Sept.  
Golden Dock. rare
- Tovara virginiana* (L.) Raf. C Sec. 22(1626-2). Aug.  
Jumpseed. common
- \**Polygonum aviculare* L. C Sec. 22(783-2). Aug. (Natzd. from Eu.)  
Knotweed, Doorweed. common
- Polygonum coccineum* Muhl. NE  $\frac{1}{4}$  Sec. 21(725-2, 726). Squaw Is. (993). July.  
Smartweed, Knotweed. common
- Polygonum pensylvanicum* L. SE  $\frac{1}{4}$  Sec. 14(738-2, 1669-2); NE  $\frac{1}{4}$  Sec. 22(786). Squaw Is. (959). Aug., Sept.  
Pinkweed. very common
- Polygonum lapathifolium* L. NE  $\frac{1}{4}$  Sec. 21(727-2). Squaw Is. (1545). July.  
Smartweed, Knotweed. very common
- Polygonum hydropiper* L. NC Sec. 22(1678-2). Sept.  
Smartweed. not uncommon
- \**Polygonum persicaria* L. SW  $\frac{1}{4}$  Sec. 13(638-2). July.  
Lady's-thumb, Heart's-ease. common
- Polygonum punctatum* Ell. SE  $\frac{1}{4}$  Sec. 22(768); NW  $\frac{1}{4}$  Sec. 22(603-2). Squaw Is. (955, 956). July, Aug.  
Water-Smartweed. common
- Polygonum sagittatum* L. SE  $\frac{1}{4}$  Sec. 14(817-2). Sept.  
Arrow-vine, Arrow-leaved Tearthumb. common
- \**Polygonum convolvulus* L. SW  $\frac{1}{4}$  Sec. 15(680-2). July. (Natzd. from Eu.)  
Black Bindweed. not uncommon
- Polygonum scandens* L. SE  $\frac{1}{4}$  Sec. 14(816-2). Squaw Is. (1652). Sept.  
Climbing False Buckwheat. not uncommon
- \*\**Polygonum cuspidatum* Sieb. & Zucc. SE  $\frac{1}{4}$  Sec. 22(1710-2). Sept. (Introd. from e. Asia)  
Japanese Knotweed. not uncommon

- \*\*Fagopyrum sagittatum** Bilib. SW  $\frac{1}{4}$  Sec. 15(1622-2). Aug. (Intro. from Asia)  
Buckwheat. common
- Chenopodiaceae**—Goosefoot Family
- Cycloloma atriplicifolium* (Spreng.) Coult. SE  $\frac{1}{4}$  Sec. 14(1692-2). Sept.  
Winged Pigweed. rare
- \**Chenopodium murale* L. NC Sec. 22(1698-2). Sept.  
Goosefoot, Pigweed. uncommon
- Chenopodium hybridum* L. NC Sec. 22(1699-2). Sept.  
Maple-leaved Goosefoot. uncommon
- \**Chenopodium album* L. SE  $\frac{1}{4}$  Sec. 14(820-2). Squaw Is. (941, 985). Sept., Aug. (Natzd. from Eu.) common
- Pigweed, Lamb's-Quarters. common
- Atriplex patula* L. NW  $\frac{1}{4}$  Sec. 22(758-2). Squaw Is. (1537). July, Aug.  
Orach. common
- Amaranthaceae**—Amaranth Family
- \**Amaranthus hybridus* L. SE  $\frac{1}{4}$  Sec. 14(834-2). Sept.  
Slender Pigweed, Green Amaranth. not uncommon
- \**Amaranthus retroflexus* L. SE  $\frac{1}{4}$  Sec. 14(845-2); SE  $\frac{1}{4}$  Sec. 22(760-2). Sept., Aug.  
Rough Pigweed, Green Amaranth. common
- Amaranthus albus* L. SC Sec. 15(1697-2). Sept.  
Tumbleweed. not uncommon
- Achida altissima* Riddell. SC Sec. 15(1696-2). Sept.  
Water-Hemp. not uncommon
- Nyctaginaceae**—Four-O'Clock Family
- Mirabilis nyctaginea* (Michx.) MacM. SE  $\frac{1}{4}$  Sec. 14(1693-2). Sept.  
Four-O'Clock, Umbrella-Wort. uncommon
- Phytolaccaceae**—Pokeweed Family
- Phytolacca americana* L. NE  $\frac{1}{4}$  Sec. 22(542-2). Squaw Is. (971). June, Aug.  
Pokeweed. common
- Portulacaceae**—Purslane Family
- \**Portulaca oleracea* L. SW  $\frac{1}{4}$  Sec. 15(1629). Aug. (Natzd. from Eu.)  
Common Purslane, "Pusley". uncommon
- Claytonia virginica* L. C Sec. 22(854-2). April.  
Spring-Beauty. common
- Caryophyllaceae**—Pink Family
- \**Stellaria media* (L.) Cyrillo. C Sec. 22(897); SE  $\frac{1}{4}$  Sec. 22(861). April, May. (Natzd. from Eurasia)  
Common Chickweed. not uncommon
- \**Cerastium vulgatum* L. C Sec. 22(898); SE  $\frac{1}{4}$  Sec. 22(505-2). May, June. (Natzd. from Eurasia)  
Common Mouse-ear Chickweed. not uncommon
- \**Lychnis alba* Mill. SE  $\frac{1}{4}$  Sec. 22(562-2). June. (Natzd. from Eurasia)  
White Cockle or Champion, Evening-Lychnis. not uncommon
- \**Silene noctiflora* L. SE  $\frac{1}{4}$  Sec. 14(804-2). Aug. (Natzd. from Eu.)  
Night-Flowering Catchfly, Sticky Cockle. not uncommon
- Ceratophyllaceae**—Hornwort Family
- Ceratophyllum demersum* L. SE  $\frac{1}{4}$  Sec. 22(570-2). June.  
Hornwort, Coontail. very common
- Nymphaeaceae**—Water-Lily Family
- Nuphar variegatum* Engelm. NC Sec. 21(1691-3). Sept.  
Bullhead-Lilly. not uncommon
- Nuphar advena* (Ait.) Ait. f. NE  $\frac{1}{4}$  Sec. 21(611-2). July.  
Yellow-Pond-Lily, Cow-Lily, Spatter-Dock. common
- Nymphaea tuberosa* Paine. SE  $\frac{1}{4}$  Sec. 22(565-2). June.  
White Water-Lily, Water-Nymph. very common
- Nelumbo lutea* (Willd.) Pers. NW  $\frac{1}{4}$  Sec. 22(690-2). Squaw Is. (1660-2). July, Sept.  
American Water-lotus, Sacred Bean. very common
- Ranunculaceae**—Crowfoot Family
- Ranunculus sceleratus* L. C Sec. 22(920-2). May.  
Cursed Crowfoot, Buttercup. not uncommon
- Ranunculus abortivus* L. SE  $\frac{1}{4}$  Sec. 22(855-3). April.  
Kidneyleaf-Buttercup. common
- Ranunculus pensylvanicus* L. f. C Sec. 22(775). Aug.  
Bristly Crowfoot. not uncommon
- Ranunculus hispidus* Michx. C Sec. 22(918-4). May.  
Buttercup, Crowfoot. common
- Ranunculus septentrionalis* Poir. NW  $\frac{1}{4}$  Sec. 15(919). May.  
Swamp-Buttercup. uncommon
- Anemone canadensis* L. C Sec. 22(541-2); SE  $\frac{1}{4}$  Sec. 22(714-2). June, July.  
Anemone. common

- Clematis virginiana* L. C Sec. 22(1625-2). Aug.  
Virgin's-bower, Devil's-Darning-Needle. common
- Menispermaceae**—Moonseed Family
- Menispermum canadense* L. C Sec. 22(929). May.  
Moonseed Vine, Yellow Parilla. uncommon
- Cruciferae**—Mustard Family
- \**Thlaspi arvense* L. C Sec. 22(910); SE  $\frac{1}{4}$  Sec. (506-2). May, June. (Natzd. from Eu.)  
Field-Penny-Cress. not uncommon
- \**Lepidium campestre* (L.) R. Br. NC Sec. 22(911-2); SE  $\frac{1}{4}$  Sec. 22(538-2). May, June. (Natzd. from Eu.)  
Field Pepper-Grass, Cow-Cress. not uncommon
- \**Brassica kaber* (DC.) L. C. Wheeler. SE  $\frac{1}{4}$  Sec. 22(523-2, 534-2); NE  $\frac{1}{4}$  Sec. 23(628); NW  $\frac{1}{4}$  Sec. 23(629-2). June, July. (Natzd. from Eurasia)  
Charlock, Mustard. very common
- \**Alliaria officinalis* Andr. Sec. 22(922-2); SE  $\frac{1}{4}$  Sec. 22(716-2). April, July. (Intro. and Natzd. from Eu.)  
Garlic-Mustard. common
- \**Sisymbrium officinale* (L.) Scop. var. *leiocarpum* DC. C Sec. 22(902). May. (Natzd. from Eu.)  
Hedge-Mustard. uncommon
- \**Erysimum repandum* L. SE  $\frac{1}{4}$  Sec. 14(909-2). May. (Adv. from Eurasia)  
Treacle-Mustard. not uncommon
- \**Rorippa sylvestris* (L.) Bess. C Sec. 22(599); SE  $\frac{1}{4}$  Sec. 22(504-2). June, July. (Natzd. from Eu.)  
Creeping Yellow Cress. not uncommon
- Rorippa islandica* (Oeder) Borbas. var. *fernaldiana* Butt. & Abbe. NE  $\frac{1}{4}$  Sec. 21(848); NW  $\frac{1}{4}$  Sec. 22(1609). July, Aug.  
Yellow Cress. not uncommon
- Rorippa islandica* (Oeder) Borbas. var. *hispida* (Desv.) Butt. & Abbe. NE  $\frac{1}{4}$  Sec. 21(687); SE  $\frac{1}{4}$  Sec. 22(596-2); NW  $\frac{1}{4}$  Sec. 22(604, 675-2). Squaw Is. (966, 974). July, Aug.  
Yellow Cress. common
- \**Barbarea vulgaris* R. Br. var. *vulgaris*. SE  $\frac{1}{4}$  Sec. 22(536, 537). June. (Natzd. from Eu.)  
Common Winter-Cress, Yellow Rocket. very common
- Cardamine pensylvanica* Muhl. C Sec. 22(908); SE  $\frac{1}{4}$  Sec. 14(1664). May, Sept.  
Bitter Cress. uncommon
- Crassulaceae**—Orpine Family
- \**Sedum sarmentosum* Bunge. SE  $\frac{1}{4}$  Sec. 14(1676). Sept. (Intro. from e. Asia)  
Stonecrop, Orpine. uncommon
- Saxifragaceae**—Saxifrage Family
- Penthorum sedoides* L. C Sec. 22(843); NW  $\frac{1}{4}$  Sec. 23(735-2). Squaw Is. (972). Aug., Sept.  
Ditch-Stonecrop. common
- Ribes americanum* Mill. SW  $\frac{1}{4}$  Sec. 15(888-2); SE  $\frac{1}{4}$  Sec. 22(556-2, 703-2). Squaw Is. (1562).  
April, June, July.  
Wild Black Currant. very common
- Rosaceae**—Rose Family
- Crataegus mollis* (T. & G.) Scheele. SW  $\frac{1}{4}$  Sec. 15(579); C Sec. 22(552-2, 925). May, June.  
Hawthorn, Red Haw, Thorn. very common
- Potentilla norvegica* L. C Sec. 22(659-2). Squaw Is. (1521). July.  
Cinquefoil, Five-finger. common
- Geum canadense* Jacq. C Sec. 22(594-2, 887); SE  $\frac{1}{4}$  Sec. 22(521-2). June, July.  
Avens. common
- Geum laciniatum* Murr. C Sec. 22(892). June.  
Avens. uncommon
- Geum vernum* (Raf.) T. & G. C Sec. 22(893-3). April, May.  
Spring Avens. very common
- Rubus occidentalis* L. NC Sec. 21(1570); NE  $\frac{1}{4}$  Sec. 21(616-2); C Sec. 22(661-2). July.  
Black Raspberry, Thimbleberry. common
- Rubus allegheniensis* Porter. SW  $\frac{1}{4}$  Sec. 22(706). July.  
Sow-teat Bramble. not uncommon
- Agrimonia parviflora* Ait. C Sec. 22(770). Aug.  
Agrimony, Cocklebur, Harvest-Lice. common
- Agrimonia pubescens* Wallr. C Sec. 22(713-2). July.  
Hairy Agrimony. not uncommon
- Rosa setigera* Michx. SW  $\frac{1}{4}$  Sec. 15(581-2). June.  
Prairie-Rose, Climbing Rose. common
- \**Rosa multiflora* Thunb. NE  $\frac{1}{4}$  Sec. 22(553-2). June. (Intro. and Natzd. from e. Asia)  
Multifloral Rose. not uncommon
- Rosa palustris* Marsh. NE  $\frac{1}{4}$  Sec. 22(849). Aug.  
Swamp Rose. uncommon

**Leguminosae**—Pulse Family

*Gleditsia triacanthos* L. NE  $\frac{1}{4}$  Sec. 22(550-2). There is a *G. triacanthos* L. wood plot to the extreme north central part of Sec. 21 along the dike. June.

Honey-Locust, Honey-shuck. common

*Cassia marilandica* L. C Sec. 22(1614); NW  $\frac{1}{4}$  Sec. 22(1614). Aug.

Wild Senna. uncommon

\**Trifolium pratense* L. C Sec. 22(884). June. (Natzd. from Eu.)

Red Clover. common

\**Trifolium repens* L. C Sec. 22(881). Squaw Is. (986). June, Aug. (Introd. and natzd. from Eu.)

White Clover. common

\**Trifolium hybridum* L. C Sec. 22(704). July. (Introd. from Eu.)

Alsike Clover. uncommon

\**Melilotus officinalis* (L.) Lam. SE  $\frac{1}{4}$  Sec. 22(501-2). June. (Natzd. from Eu.)

Yellow Sweet Clover, Melilot. very common

\**Melilotus alba* Desr. SE  $\frac{1}{4}$  Sec. 22(529-2). *Melilotus* was found on Squaw Is. (1542) but not in flower. June. (Natzd. from Eu.)

White Sweet Clover. very common

\**Medicago lupulina* L. SW  $\frac{1}{4}$  Sec. 15(679-2); NC Sec. 22(900). Squaw Is. (967). June, July, Aug. (Natzd. from Eu.)

Black Medick, Nonesuch. very common

*Apios americana* Medic. SE  $\frac{1}{4}$  Sec. 14(1709). Squaw Is. (1527, 1539, 1540, 1599-2). July, Aug., Sept.

Groundnut, Wild Bean, Potato-Bean. not uncommon

*Strophostyles helvola* (L.) Ell. NE  $\frac{1}{4}$  Sec. 21(756-2). Squaw Is. (961). Aug.

Wild Bean. common

*Amphicarpa bracteata* (L.) Fern. var. *comosa* (L.) Fern. Squaw Is. (1538, 1600). (Observed in SE  $\frac{1}{4}$  Sec. 14). July, Aug.

Pitcher's Hog-Peanut. not uncommon

**Oxalidaceae**—Wood-Sorrel Family

*Oxalis europaea* Jord. SE  $\frac{1}{4}$  Sec. 22(535). Squaw Is. (982). June, Aug.

Wood-Sorrel, Lady's-Sorrel. common

**Geraniaceae**—Geranium Family

*Geranium robertianum* L. C Sec. 22(547-2, 928) in woody area along the main entrance road.

May, June.

Herb-Robert, Cranesbill. not uncommon

**Rutaceae**—Rue Family

*Xanthoxylum americanum* Mill. C Sec. 22(1627-2). Aug.

Northern Prickly Ash, Toothache-tree. not uncommon

**Euphorbiaceae**—Spurge Family

*Acalypha rhomboidea* Raf. NC Sec. 22(1666-4). Sept.

Three-seeded Mercury, Copperleaf. not uncommon

*Euphorbia supina* Raf. C Sec. 22(1631). Aug.

Milk-Purslane. not uncommon

*Euphorbia maculata* L. SE  $\frac{1}{4}$  Sec. 14(818); NE  $\frac{1}{4}$  Sec. 21(802); C Sec. 22(705-2); NW  $\frac{1}{4}$  Sec. 22(757). July, Aug., Sept.

Spurge, Eyebane. very common

*Euphorbia vermiculata* Raf. C Sec. 22(782). Aug.

Spurge. uncommon

**Limnanthaceae**—False Mermaid Family

*Floerkea proserpinacoides* Willd. C Sec. 22(883-2). May.

False Mermaid. not uncommon

**Anacardiaceae**—Cashew Family

*Rhus typhina* L. SW  $\frac{1}{4}$  Sec. 15(573-2); NE  $\frac{1}{4}$  Sec. 22(546-2). Squaw Is. (978). June, Aug.

Staghorn-Sumac, Velvet Sumac. common

*Rhus glabra* L. NW  $\frac{1}{4}$  Sec. 22(617-2) along the dike. July.

Smooth Sumac. common

*Rhus radicans* L. C Sec. 22(657-2). Squaw Is. (983). July, Aug.

Poison Ivy, Cow-itch. very common

**Aceraceae**—Maple Family

*Acer saccharinum* L. SE  $\frac{1}{4}$  Sec. 14(627-2). Squaw Is. (991). July.

Silver, White, Soft or River Maple. not uncommon

*Acer negundo* L. N Sec. 22(545-2); SE  $\frac{1}{4}$  Sec. 22(516-2). Squaw Is. (995). June, July.

Box-Elder, Ash-leaved Maple. common

**Balsaminaceae**—Touch-Me-Not Family

*Impatiens capensis* Meerb. SE  $\frac{1}{4}$  Sec. 14(732, 814); NW  $\frac{1}{4}$  Sec. 22(696-2). Squaw Is. 942, 1591). July, Aug., Sept.

Spotted Touch-me-not, Snapweed, Lady's earrings. very common



**Vitaceae**—Vine Family

*Parthenocissus inserta* (Kerner) K. Fritsch. C Sec. 22(926); SE  $\frac{1}{4}$  Sec. 22(508-2). Squaw Is. (1556). May, June, July.

Virginia Creeper, Woodbine.

not uncommon

*Vitis riparia* Michx. SE  $\frac{1}{4}$  Sec. 22(509-2). Squaw Is. (940). June, July.

River-Bank or Frost-Grape.

common

**Malvaceae**—Mallow Family

\**Abutilon theophrasti* Medic. NE  $\frac{1}{4}$  Sec. 21(755-2). Squaw Is. (988). Aug. (Natzd. from India)

Velvet-leaf, Butter-print.

common

*Hibiscus palustris* L. NW  $\frac{1}{4}$  Sec. 22(721-2). Squaw Is. (937, 962). July, Aug.

Swamp-Rose-Mallow, "Marsh-Mallow".

very common

\**Hibiscus trionum* L. SW  $\frac{1}{4}$  Sec. 15(747-2); NE  $\frac{1}{4}$  Sec. 21(683-2). July, Aug. (Adv. from Eu.)

Flower-of-an-Hour.

not uncommon

**Guttiferae**—St. John's-Wort Family

*Hypericum punctatum* Lam. C Sec. 22(658-2). July.

St. John's-Wort.

common

**Violaceae**—Violet Family

*Viola papilionacea* Pursh. C Sec. 14(867); C Sec. 22(857-2). April.

Common Blue Violet

common

*Viola pubescens* Ait. C Sec. 22(858-2). April.

Downy Yellow Violet.

not uncommon

**Lythraceae**—Loosestrife Family

*Ammannia coccinea* Rothb. SE  $\frac{1}{4}$  Sec. 14(1702-2). Squaw Is. (1645). Sept.

non uncommon

*Decodon verticillatus* (L.) Ell. NE  $\frac{1}{4}$  Sec. 21(722-2). July.

Swamp-Loosestrife, Water-Oleander.

very common

*Lythrum alatum* Pursh. SW  $\frac{1}{4}$  Sec. 14(645-2); NW  $\frac{1}{4}$  Sec. 22(620-2); NW  $\frac{1}{4}$  Sec. 23(795).

(There is wide variation of leaf and flower size.) July, Aug.

Loosestrife.

common

\**Lythrum salicaria* L. NE  $\frac{1}{4}$  Sec. 21(723-2). July. (Natzd. from Eu.)

Spiked Loosestrife.

rare

**Onagraceae**—Evening-Primrose Family

*Ludwigia palustris* (L.) Ell. var. *americana* (DC.) Fern. & Grisc. NE  $\frac{1}{4}$  Sec. 22(743-2); NW  $\frac{1}{4}$  Sec. 22(1615). Aug.

Water-purslane.

not uncommon

*Epilobium glandulosum* Lehm. var. *adenocaulon* (Haussk.) Fern. C Sec. 22(807-3, 1620); NE  $\frac{1}{4}$  Sec. 22(789). Squaw Is. (1590). Aug., Sept.

Willow-Herb.

common

*Oenothera biennis* L. NE  $\frac{1}{4}$  Sec. 21(681, 728-2). Squaw Is. (980, 1500). July, Aug.

Evening-Primrose.

very common

*Gaura biennis* L. C Sec. 22(1610); NC Sec. 22(800-2). Squaw Is. (1658). Aug., Sept.

Gaura.

not uncommon

*Circaea quadrisculata* (Macim.) Franch. & Sav. C Sec. 22(543-2, 597-2); SE  $\frac{1}{4}$  Sec. 22(702-2).

June, July.

Enchanter's Nightshade.

common

**Haloragaceae**—Water-Milfoil Family

*Myriophyllum exallescens* Fern. NE  $\frac{1}{4}$  Sec. 21(824); SE  $\frac{1}{4}$  Sec. 22(568-2). June, Sept.

Water-Milfoil.

very common

**Umbelliferae**—Parsley Family

*Sanicula canadensis* L. NC Sec. 21(1581-4) in Honey-Locust wood plot. Squaw Is. (1533). July.

Sanicle, Black Snakeroot.

not uncommon

*Cicuta bulbifera* L. SW  $\frac{1}{4}$  Sec. 15(754-2); C Sec. 22(863); NW  $\frac{1}{4}$  Sec. 22(830-2). May, Aug., Sept.

Water-Hemlock.

not uncommon

*Cicuta maculata* L. SW  $\frac{1}{4}$  Sec. 15(753-3). Squaw Is. (1518). July, Aug.

Spotted Water-Hemlock, Beaver-Poison.

common

*Angelica atropurpurea* L. Squaw Is. (957). Aug.

Alexanders Angelica.

uncommon

\**Pastinaca sativa* L. Squaw Is. (1519). July. (Introd. and natzd. from Eu.)

Parsnip.

uncommon

\**Daucus carota* L. SC Sec. 15(1707-2). Sept. (Natzd. from Eu.)

Wild Carrot, Queen Anne's-Lace.

common

**Cornaceae**—Dogwood Family

*Cornus drummondii* Meyer. SW  $\frac{1}{4}$  Sec. 15(577-2); NC Sec. 22(803); SE  $\frac{1}{4}$  Sec. 22(524-2). Squaw Is. (946). June, July, Aug.

Cornel, Dogwood.

common

- Cornus amomum* Mill. Squaw Is. (947). Aug.  
"Red Willow," Dogwood. uncommon
- Cornus racemosa* Lam. NW  $\frac{1}{4}$  Sec. 22(739-2). Aug.  
Cornel, Dogwood. not uncommon
- Primulaceae**—Primrose Family
- \**Lysimachia nummularia* L. SE  $\frac{1}{4}$  Sec. 22(514-2). Squaw Is. (1506). June, July. (Introd. and natzd. from Eu.)  
Moneywort. very common
- Lysimachia thyrsiflora* L. NC Sec. 22(889-2). May.  
Tufted Loosestrife. not uncommon
- Lysimachia ciliata* L. C Sec. 22(590-2). Squaw Is. (964). July, Aug.  
Loosestrife. very common
- Samolus parviflorus* Raf. Squaw Is. (1593-2). Aug.  
Water-Pimpernel, Brookweed. uncommon
- Oleaceae**—Olive Family
- Fraxinus pennsylvanica* Marsh. var. *pennsylvanica*. C. Sec. 22(1630); NC Sec. 22(665-2); SE  $\frac{1}{4}$  Sec. 22(530-2). Squaw Is. (939). June, July, Aug.  
Red Ash. very common
- Apocynaceae**—Dogbane Family
- Apocynum cannabinum* L. SE  $\frac{1}{4}$  Sec. 22(517-2). Squaw Is. (1510). June, July.  
Indian Hemp. common
- Asclepiadaceae**—Milkweed Family
- Asclepias tuberosa* L. Northern limit of Sec. 21 along drainage ditch (613-2). July.  
Butterfly-weed, Pleurisy-root. uncommon
- Asclepias incarnata* L. NE  $\frac{1}{4}$  Sec. 21(608-2). Squaw Is. (1509). July.  
Swamp-Milkweed. common
- Asclepias syriaca* L. SW  $\frac{1}{4}$  Sec. 15(576-2). Squaw Is. (1513). June, July.  
Common Milkweed or Silkweed. very common
- Convolvulaceae**—Convolvulus Family
- \**Ipomoea purpurea* (L.) Roth. SC Sec. 15(1671-2). Sept. (Introd. and natzd. from Trop. Am.)  
Morning-Glory. uncommon
- Convolvulus sepium* L. var. *sepium*. SE  $\frac{1}{4}$  Sec. 22(503, 513-2). Squaw Is. (997). June, July.  
Hedge-Bindweed, Wild Morning-Glory. common
- Cuscuta coryli* Engelm. SW  $\frac{1}{4}$  Sec. 13(637-2). July.  
Dodder, Love-vine, Strangle-weed. not uncommon
- Cuscuta gronovii* Willd. NW  $\frac{1}{4}$  Sec. 23(793-2) growing on *Verbena hastata* L. Aug.  
Dodder, Love-vine, Strangle-weed. not common
- Hydrophyllaceae**—Waterleaf Family
- Phacelia purshii* Buckl. C Sec. 22(927). May.  
Scorpion-weed, Miami-mist. rare
- Boraginaceae**—Borage Family
- Lithospermum latifolium* Michx. C Sec. 22(1632-2). Aug.  
American Gromwell, Puccoon. not uncommon
- \**Cynoglossum officinale* L. SE  $\frac{1}{4}$  Sec. 22(511-2). June. (Natzd. from Eu.)  
Common Hound's-Tongue. not uncommon
- Hackelia virginiana* (L.) I. M. Johnston. C Sec. 22(773-2). Aug.  
Stickseed, Beggar's-Lice. not uncommon
- Verbenaceae**—Vervain Family
- Verbena urticifolia* L. C Sec. 22(655-2). Squaw Is. (958). July, Aug.  
White Vervain. common
- Verbena hastata* L. SW  $\frac{1}{4}$  Sec. 15(609-2); NW  $\frac{1}{4}$  Sec. 22(724-2). Squaw Is. (1551). July.  
Blue Vervain, Simpler's-Joy. very common
- Lippia lanceolata* Michx. SC Sec. 22(707-2). Squaw Is. (1501). July.  
Fog-fruit. not uncommon
- Labiatae**—Mint Family
- Teucrium canadense* L. C Sec. 22(592-2). Squaw Is. (1507). July.  
American Germander, Wood-Sage. common
- Scutellaria lateriflora* L. SE  $\frac{1}{4}$  Sec. 22(761-2). Squaw Is. (1596). Aug.  
Mad-Dog Skullcap. common
- Scutellaria epilobiifolia* A. Hamilton. SE  $\frac{1}{4}$  Sec. 22(671-2); NW  $\frac{1}{4}$  Sec. 23(618, 733-2). July, Aug.  
Common or Marsh Skullcap. common
- Scutellaria nervosa* Pursh. C Sec. 22(1617) in woods. Aug.  
Skullcap. not uncommon
- \**Nepeta cataria* L. SW  $\frac{1}{4}$  Sec. 15(585-2). June. (Natzd. from Eu.)  
Catnip. not uncommon
- \**Glechoma hederacea* L. NE  $\frac{1}{4}$  Sec. 23(632-2). July. (Natzd. from Eu.)  
Ground-Ivy, Run-Away-Robin. uncommon

- \**Prunella vulgaris* L. C Sec. 22(654); SC Sec. 22(708-2). Squaw Is. (1659). July, Sept. (Natzd. from Eurasia)  
Heal-all, Carpenter-weed. common
- Physostegia virginiana* (L.) Benth. SE  $\frac{1}{4}$  Sec. 22(766-2) along the Sandusky Bay. Squaw Is. (960) more abundant. Aug.  
False Dragonhead. not uncommon
- Stachys tenuifolia* Willd. SW  $\frac{1}{4}$  Sec. 15(578-2, 1574, 1575, 1576). Squaw Is. (1554, 1560). June, July.  
Hedge-Nettle. common
- Blephilia hirsuta* (Pursh) Benth. C Sec. 22(763-2, 1628). Aug.  
Wood-mint. not uncommon
- Hedeoma pulegioides* (L.) Pers. C Sec. 22(772-2) in an opening along the main entrance road. Aug.  
American Pennyroyal, Pudding-grass. uncommon
- Lycopus uniflorus* Michx. SE  $\frac{1}{4}$  Sec. 22(765-2) along Sandusky Bay. Squaw Is. (1643). Aug., Sept.  
Water-Horehound, Bugleweed. uncommon
- Lycopus americanus* Muhl. SW  $\frac{1}{4}$  Sec. 15(676-2). Squaw Is. (994, 1553). July.  
Water-Horehound, Bugleweed. common
- Mentha arvensis* L. NW  $\frac{1}{4}$  Sec. 22(759-2); SE  $\frac{1}{4}$  Sec. 22(717). Squaw Is. (1505). July, Aug.  
Mint. common
- Solanaceae**—Nightshade Family
- \**Solanum dulcamara* L. SE  $\frac{1}{4}$  Sec. 22(515-2); NC Sec. 23(666-2). Squaw Is. (998). June, July. (Introd. and natzd. from Eu.)  
Bittersweet Nightshade. common
- \**Solanum dulcamara* L. forma *albiflorum* House. SW  $\frac{1}{4}$  Sec. 15(580-2); SE  $\frac{1}{4}$  Sec. 22(512-2). June.  
White Flowered-Bittersweet Nightshade. not uncommon
- \**Solanum nigrum* L. NW  $\frac{1}{4}$  Sec. 23(792). Aug., Sept. (Natzd. from Eu.)  
Black Nightshade. not uncommon
- Solanum carolinense* L. SW  $\frac{1}{4}$  Sec. 15(574, 612-2). June, July.  
Horse-Nettle, Ball-Nettle. not uncommon
- +*Lycopersicum esculentum* Mill. Squaw Is. (1647). Sept.  
Tomato. uncommon
- Physalis subglabrata* Mackenz. & Bush. NE  $\frac{1}{4}$  Sec. 21(685). July.  
Ground-cherry. uncommon
- Physalis heterophylla* Nees. Squaw Is. (1602). Aug.  
Ground-cherry. rare
- +\**Physalis alkekengi* L. SW  $\frac{1}{4}$  Sec. 14(851). Sept. (Introd. from Asia)  
Chinese Lantern-Plant, Winter-Cherry. rare
- \**Datura stramonium* L. NE  $\frac{1}{4}$  Sec. 23(744-2). Aug. (Natzd. from Asia)  
Jimsonweed, Thorn-Apple, Stramonium. not uncommon
- Scrophulariaceae**—Figwort Family
- \**Verbascum thapsus* L. NC Sec. 22(664-2). July. (Natzd. from Eu.)  
Common Mullein, Flannel-Plant. not uncommon
- \**Verbascum blattaria* L. SE  $\frac{1}{4}$  Sec. 22(668-2); SW  $\frac{1}{4}$  Sec. 14(500). June, July. (Natzd. from Eu.)  
Moth-Mullein. common
- \**Chaenorhinum minus* (L.) Lange. C Sec. 22(776) along main entrance road. Aug. (Natzd. from Eu.)  
Lesser Toadflax, Dwarf Snapdragon. rare
- Scrophularia marilandica* L. NE  $\frac{1}{4}$  Sec. 23(740-2). Squaw Is. (981). Aug.  
Carpenter's-square. not uncommon
- Mimulus ringens* L. SE  $\frac{1}{4}$  Sec. 22(769-2); NE  $\frac{1}{4}$  Sec. 23(742-2). Squaw Is. (999). July, Aug.  
Monkey-flower. common
- Lindernia dubia* (L.) Pennell. SE  $\frac{1}{4}$  Sec. 14(1704). Squaw Is. (976). Aug., Sept.  
False Pimpernel. uncommon
- Veronica peregrina* L. SW-C Sec. 15(882). June.  
Neckweed, Purslane-Speedwell. not uncommon
- Bignoniaceae**—Bignonia Family
- Catalpa speciosa* Warder. N Sec. 22(544-2). June.  
Catawba-tree, cigar-tree. common
- Lentibulariaceae**—Bladderwort Family
- Utricularia vulgaris* L. SW  $\frac{1}{4}$  Sec. 14(639-2); NE  $\frac{1}{4}$  Sec. 22(777). July, Aug.  
Bladderwort. not uncommon
- Plantaginaceae**—Plantain Family
- Plantago rugelii* Dcne. C Sec. 22(653-2); SE  $\frac{1}{4}$  Sec. 22(1585). Squaw Is. (1520). July.  
Plantain, Ribwort. common

- \**Plantago lanceolata* L. SE  $\frac{1}{4}$  Sec. 22(1711). Sept. (Natzd. from Eu.)  
English Plantain, Buckhorn. uncommon
- Rubiaceae**—Madder Family
- Galium aparine* L. C Sec. 22(886-3). Squaw Is. (1588). May, Aug.  
Common Cleavers, Spring-Cleavers, Goosegrass. common
- Galium triflorum* Michx. C Sec. 22(660-2). July.  
Fragrant Bedstraw, Sweet-scented Bedstraw. common
- Galium trifidum* L. NW  $\frac{1}{4}$  Sec. 22(689-2). July.  
Bedstraw (not certain)
- Galium tinctorium* L. C Sec. 22(593-2); SE  $\frac{1}{4}$  Sec. 22(560-2); NW  $\frac{1}{4}$  Sec. 23(626-2). June, July.  
Bedstraw, Cleavers. common
- Cephalanthus occidentalis* L. SE  $\frac{1}{4}$  Sec. 22(555-2); NW  $\frac{1}{4}$  Sec. 23(662-2). June, July.  
Buttonbush. not uncommon
- Caprifoliaceae**—Honeysuckle Family
- Triosteum perfoliatum* L. N Sec. 22(699-2); NC Sec. 22(895). May, July.  
Tinker's-weed, Wild Coffee, Horse-gentain. not uncommon
- Viburnum lentago* L. C Sec. 22(894-2). May.  
Sweet Viburnum, Nannyberry. uncommon
- Sambucus canadensis* L. NE  $\frac{1}{4}$  Sec. 22(549-2). Squaw Is. (1559). June, July.  
Common Elderberry common
- Dipsacaceae**—Teasel Family
- \**Dipsacus sylvestris* Huds. SW  $\frac{1}{4}$  Sec. 14(651-2); SE  $\frac{1}{4}$  Sec. 22(533-2). Squaw Is. (1502).  
June, July. (Natzd. from Eu.)  
Teasel. very common
- Cucurbitaceae**—Gourd Family
- Sicyos angulatus* L. Squaw Is. (952, 1598-2). Aug.  
Bur-Cucumber. uncommon
- Echinocystis lobata* (Michx.) T. & G. C Sec. 22(808, 896). Squaw Is. (1597-2). May, Aug., Sept.  
Wild Balsam-Apple, Wild or Prickly Cucumber. common
- Campanulaceae**—Bluebell Family
- Lobelia inflata* L. C Sec. 22(762-2). Aug.  
Indian-Tobacco. not uncommon
- Compositae Family**—Composite Family
- Vernonia altissima* Nutt. SE  $\frac{1}{4}$  Sec. 14(809-2); NE-C Sec. 22(741-2). Aug., Sept.  
Ironweed. common
- Eupatorium maculatum* L. SE  $\frac{1}{4}$  Sec. 14(1695-2). Sept.  
Joe-Pye-weed. uncommon
- Eupatorium perfoliatum* L. SE  $\frac{1}{4}$  Sec. 22(764-2). Squaw Is. (1514). July, Aug.  
Thoroughwort, Boneset. very common
- Eupatorium rugosum* Houtt. SE  $\frac{1}{4}$  Sec. 14(810-2, 1684). Squaw Is. (996). July, Sept.  
White Snakeroot. not uncommon
- Solidago altissima* L. SE  $\frac{1}{4}$  Sec. 14(819-2). Squaw Is. (1639). Sept.  
Goldenrod. common
- Solidago gigantea* Ait. var. *leiophylla* Fern. SE  $\frac{1}{4}$  Sec. 14(1670, 1679); NE  $\frac{1}{4}$  Sec. 23(794-2). Aug., Sept.  
Goldenrod. common
- Solidago graminifolia* (L.) Salisb. C Sec. 22(805-3). Sept.  
Goldenrod. common
- Boltonia asteroides* (L.) L'Her. C Sec. 22(806-3); SE  $\frac{1}{4}$  Sec. 14(1694). Squaw Is. (968). Aug., Sept.  
Boltonia. not uncommon
- Aster novae-angliae* L. NW  $\frac{1}{4}$  Sec. 22(847-4). Sept.  
New England Aster. very common
- Aster pilosus* Willd. var. *pilosus*. NC Sec. 22(1680-2). Sept.  
Aster.
- Aster simplex* Willd. var. *simplex*. SE  $\frac{1}{4}$  Sec. 14(821); NW  $\frac{1}{4}$  Sec. 22(846-2). Squaw Is. (1638). Sept.  
Aster, Starwort. common
- Erigeron philadelphicus* L. C Sec. 22(924-2). May.  
Philadelphia Fleabane. not uncommon
- Erigeron annuus* (L.) Pers. N Sec. 22(698-2); SE  $\frac{1}{4}$  Sec. 22(525-2). Squaw Is. (933, 950).  
June, July, Aug.  
Daisy-Fleabane. common
- Erigeron canadensis* L. C Sec. 22(771-2); NW  $\frac{1}{4}$  Sec. 23(734-2). Squaw Is. (954). Aug.  
Horse-weed, Hog-weed, Butter-weed. common
- Ambrosia trifida* L. SW  $\frac{1}{4}$  Sec. 15(750-2); C Sec. 22(1624). Aug.  
Great Ragweed, Buffalo-weed. common

- Ambrosia artemisiifolia* L. C Sec. 22(712-2, 1623). July, Aug.  
Common Ragweed, Roman Wormweed. common
- \* *Xanthium strumarium* L. C Sec. 22(842-2); SW ¼ Sec. 15(749-2). Squaw Is. (963). Aug., Sept. (Adv. from Eu.) not uncommon
- Heliopsis helianthoides* (L.) Sweet. SE ¼ Sec. 22(678-2). Squaw Is. (1526). July. Ox-eye. not uncommon
- Eclipta alba* (L.) Hassk. NW ¼ Sec. 22(829-2). Squaw Is. (1603, 1653). Aug., Sept. Yerba-de-Tage. not uncommon
- Rudbeckia laciniata* L. SE ¼ Sec. 14(1682-2). Squaw Is. (965, 973). Aug., Sept. Coneflower. not uncommon
- + *Helianthus annuus* L. SC Sec. 15(1685-2). Sept. Common Sunflower. common
- Helianthus tuberosus* L. Squaw Is. (1642-2). Sept. Jerusalem Artichoke. uncommon
- Actinomeris alternifolia* (L.) DC. SE ¼ Sec. 14(811-2). Sept. Wing-stem. uncommon
- Bidens cernua* L. NW ¼ Sec. 21(831-2); NC Sec. 23(1687-2). Squaw Is. (1663). Sept. Stick-tight. very common
- Bidens comosa* (Gray) Wieg. SE ¼ Sec. 14(1686). Squaw Is. (1644-3). Sept. Beggarticks. common
- Bidens frondosa* L. SE ¼ Sec. 14(823). Squaw Is. (1662). Sept. Beggarticks, Stick-tight. common
- \* *Galinsoga ciliata* (Raf.) Blake. C Sec. 22(656-2). July. (Natzd. from Trop. Am.) common
- Helenium autumnale* L. NE ¼ Sec. 22(787); SE ¼ Sec. 22(767-2); NW ¼ Sec. 22(844). Squaw Is. (943, 1595). July, Aug., Sept. Sneezeweed. common
- \* *Anthemis cotula* L. SE ¼ Sec. 22(502, 507); NW ¼ Sec. 22(731-2). June, July. (Natzd. from Eu.) very common
- \* *Matricaria matricarioides* (Less.) Porter. SE ¼ Sec. 22(1583). July. (Natzd. from Pacific states) not uncommon
- Artemisia biennis* Willd. SE ¼ Sec. 14(1683); Squaw Is. (949, 1641). Aug., Sept. (Presumably originating in our Cordilleran region) not uncommon
- Erechtites hieracifolia* (L.) Raf. SE ¼ Sec. 14(815-2). Sept. Pilewort. common
- \* *Arctium lappa* L. SE ¼ Sec. 22(526-2). June. (Natzd. from Eu.) Great Burdock. very common
- \* *Cirsium vulgare* (Savi) Tenore. SW ¼ Sec. 15(1566); NE ¼ Sec. 21(682). July, Aug. (Natzd. from Eu.) Bull or Common Thistle. not uncommon
- \* *Cirsium arvense* (L.) Scop. SW ¼ Sec. 15(607-2); NE ¼ Sec. 21(1568); SE ¼ Sec. 22(532-2). Squaw Is. (990, 1657). June, July, Sept. (Natzd. from Eu.) Canada Thistle. very common
- \* *Cichorium intybus* L. SW ¼ Sec. 15(746-2). Aug. (Natzd. from Eu.) Common Chicory, Blue Sailors. common
- \* *Tragopogon porrifolius* L. SW ¼ Sec. 15(913-2). June. (Introd. from Eu.) Salsify, Oyster-Plant, Goat's-Beard. uncommon
- \* *Tragopogon pratensis* L. NE ¼ Sec. 21(799). Aug. (Natzd. from Eu.) Goat's-Beard. uncommon
- \* *Taraxacum officinale* Weber. SW ¼ Sec. 22(701). Squaw Is. (1504). July. (Natzd. from Eu.) Common Dandelion. common
- \* *Sonchus uliginosus* Bieb. NE ¼ Sec. 21(605-2, 729-2). Squaw Is. (1532). July. (Natzd. from Eu.) Sow-Thistle, Milk-Thistle. common
- \* *Sonchus asper* (L.) Hill. SW ¼ Sec. 14(652-2). Squaw Is. (970). July, Aug. (Natzd. from Eu.) Spiny-leaved Sow-Thistle. not uncommon
- \* *Lactuca scariola* L. Squaw Is. (1528). July. (Natzd. from Eu.) Prickly Lettuce. uncommon
- \* *Lactuca saligna* L. NE ¼ Sec. 22(785). Aug. (Natzd. from Eu.) Willow-leaved Lettuce. uncommon
- Lactuca floridana* (L.) Gaertn. var. *floridana*. Squaw Is. (1536). July. Lettuce, "Milkweed". uncommon

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